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MIND AND BODY

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FRESH AIR IN THE TREATMENT OF DISEASE.*

By EDWIN E. GRAHAM, M. D.,
Professor of Diseases of Children in The Jefferson Medical College, Philadelphia.

One must always study all the factors leading up to, and possibly causing disease, and before deciding the positive influence of one factor, eliminate wholly or in part, other etiological influences.

In considering, therefore, the role that fresh air plays, "controls" should be employed, as far as possible for the comparison of a series of cases of the same disease in the same type of cases living under similar conditions, should enable one to draw fairly accurate conclusions.

My first work in fresh air treatment began some eight years ago in the children's ward of the Philadelphia Hospital. The wards were large, the milk fairly good, enough nurses were on duty to keep the children fed according to my directions, they were bathed regularly and kept clean: but in the wards where the very young infants, mostly foundlings, were placed, the results were very unsatisfactory. Much depended upon the physical condition of the infant on admission. A frail infant, perhaps premature and under normal weight, would gain for a few weeks at best, then remain stationary in weight, finally gradually lose weight, begin to have diarrhea and die. Robust infants on admission often did well for three months. The same symptoms after this period began to develop as in the infants admitted in a condition of malnutrition and in spite of my best efforts, many of these robust children died.

The same type of infants in my private practice were almost without exception, doing well. Convinced that neither the food, nursing, nor general care of these hospital infants was at fault, and that the so-called hospitalism was nothing but lack of fresh air, and lack of out-door air, I ordered these children, in the month of January, placed for two hours each day on the fire escapes.

The cribs were simply moved out upon the fire-escapes, and towels pinned over the top of both ends of the crib, as wind shields. The infant

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* Read before the Twentieth Annual Meeting of the American Pediatric Society, Delaware Water Gap, May 26, 1908.

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mortality began to lessen immediately, and I began to see some hope for my infant hospital patients. In the following two or three years, during my service in January, February and March of each year, I had the children, for a number of hours each day, unless it was raining or snowing, carried down to the large open space facing the hospital buildings, and kept in small hammocks. These infants were always bundled up in blankets, their heads well covered, and their eyes, nose and mouth covered with a gauze veil. They did remarkably well; so well, in fact, that instead of my infants dying, most of them began to gain in weight and health, and the deaths were almost entirely in infants under three months of age, whose condition was distinctly bad upon admission to the hospital.

During the past five years the infants have been placed in the new modern and up-to-date building of the Philadelphia Hospital. The wards are large, the air space ample, the milk the very best; porches surround the hospital on two sides, the infants practically have an abundance of fresh air day and night, and they do as well as could be hoped for. I am no longer a pessimist when in the infants' ward, but an optimist. In the new Jefferson Hospital, where I am on duty the entire year, the children have an ideal ward on the eighth floor, large windows on three sides with a large roof garden adjoining, the latter fitted up with every convenience, such as hammocks, shade, wind shields, etc. The roof garden is used all the year around, winter and summer, and the results are most encouraging.

Of all the factors which have contributed to the reduction of this infant mortality, fresh air has, in my opinion, been the one of prime importance.

During the last three years in my service in the Philadelphia Hospital, I have treated all my severe cases of broncho and lobar pneumonia in children of all ages by the fresh air treatment. These infants and children, as soon as taken ill, are removed from the general ward and placed in a special room provided for such cases. The room holds six cribs comfortably, and rarely, during my service in the last three years, has a bed been vacant. Many of these cases are secondary brochopneumonia. A large percentage of the children, in fact most of them, are hospital children, but the results have been so different from the old plan as followed years ago, that I have lost more or less my dread of pneumonia as a hospital disease. True, these cases have good nursing, good care and every possible attention, but still they are cases of pneumonia in hospital practice and they do remarkably well.

In another similar room in the same hospital, during the same period of time, I have been treating my typhoids. Occasionally, I have a typhoid under two years of age, most of them are over three, and the average age about six years. The typhoid cases come from the same class of patients as the pneumonias, and they do so much better in the fresh air that nothing could persuade me to return to the old method of treatment, similar in every way to the present, but *minus* the fresh air. The rooms where the typhoids and pneumonias are kept have large windows on two sides, and an open door on a third side; these are kept open day and night; a distinct effort is made to keep the hands and feet of these children warm by gloves, stockings and hot water bags, but the rooms are always cold, except for a few minutes every two or three hours, when the windows are closed and all the children carefully examined as to cleanliness, etc.

The few cases of tuberculosis are kept in a special portion of one of the porches, living practically in the open air. Arrangements are just being made for a special pavilion for these cases. In the Jefferson Hospital the pneumonia and typhoid cases are treated by the fresh air method and do infinitely better than formerly, when the fresh air treatment was not employed.

In private practice for five years I have treated all infants and children, sick and well, with fresh air; in fact, on my first visit to the child, I, if possible, instill into the mother the principle that fresh air differs from impure air as much as fresh milk from impure milk. Once gain her consent, and the treatment is an assured fact. I am more than surprised to see the willingness with which most mothers, no matter what their social status may be, enter into the treatment. The physician must be enthusiastic; the mother is, in my experience, easy to convince.. It would be easy for me to give the histories of cases, but the time allotted to me is brief. Suffice it to say, that in many cases during the winters and summers of the past five years, I have kept numerous infants out of doors all day long, except bringing them in occasionally to the house for the purpose of removing their soiled clothing, and I have never in all that time seen a single injurious symptom result, and I am positive it has been the means of saving many lives. Rickets, scrofulosis, gastrointestinal disease, any and all conditions are benefited by the treatment. Measles, in hospital cases, I treat in separate rooms, each room opening upon a common porch, surrounded by glass. During the first few days the children are kept in the cool, darkened rooms, then moved to cribs on the porch, and the windows on the porch opened more or less, insuring an abundance of fresh air. The influence of climate associated with rest in the treatment of nephritis and cardiac disease is now so well recognized that comment is unnecessary.

It is an interesting question, which experience alone can decide, as to what arrangement will, in the future, be made to control the *degree* of temperature in which these children are kept when in the fresh air. In hospital practice it has been my custom to keep infants under three months for a few days in the cool air of the ward before putting them outdoors—the temperature of the ward usually being near 60° F. in the cooler months. In private practice, where the temperature can be more absolutely controlled for each individual case, I gradually but rapidly lower the temperature of the room to 60°F., then dressing the child exactly as if it were to be taken outdoors, gradually lower the temperature of the room for a few hours each day until it approximates the degree of temperature in the fresh outside air. Indifferent temperature feels neither warm nor cold (Wachenheim), and is most restful. In children, indifferent temperature is about 75°F. in summer in summer clothing, and about 65° F. in winter in winter clothing, and varies with age and vitality. Temperatures above indifferent are not sedative, but cause a continuous stimulation that is harmful if prolonged, ending in exhaustion. The same author says that, "Young children stand severe cold badly." This is not my experience, if by "severe cold" is meant the ordinary winter weather in Philadelphia. True it is, that these children are bundled up from head to foot, lie in a comfortable baby coach, and have thick gloves, stockings, veil and perhaps a hot-water bag, but they do breathe the cool air, and they all do well. Two or three rainy or snowy days will convince any one; the children are kept indoors in a warm room and they fuss and cry; out of doors they are quiet.

Humidity has an influence by checking or increasing the evaporation from the body and further studies along this line will be of value.

The distance above sea level exerts a certain distinct influence upon the skin, kidneys and blood, and induces metabolic changes of importance The influence of a few months of camp life on growing boys is appreciated by every one. "Camp life" is fresh air treatment.

When it is possible to select the kind of fresh air desired, certain broad lines may be followed. Increase of heat production, and, consequently, an augmented metabolism, are rendered necessary by cold, dry air of high altitudes. This is proven by the larger amount of carbonic acid gas given off by the lungs. It also, as a rule, increases the red blood cells during the first few weeks of treatment. High altitudes are useful in children with incipient tuberculosis, or an inherited tendency to tuberculosis.

Fresh seashore air is of decided benefit in infants and children convalescing from severe illnesses, especially gastrointestinal in type. It is of distinct benefit in the so-called strumous type.

Fresh country air is better than fresh city air. Rural districts are better than urban, but density of population, such as one sees often in large cities, does not necessarily imply lack of fresh air. The number of people living in a given area may be very large, but if they live in comfortable houses, keep the windows open and live under the best hygiene conditions, fresh air can be secured in abundance, and infants and children do well. If the same number of people living in the same area do not have an abundance of fresh air, the infants and children do badly. Density of population may have much or little to do with fresh air.

Statistics prove conclusively that in *all* countries where the mothers' work in industrial plants, necessitating their absence from home a large portion of the day, that the infants and children show a much higher mortality rate, owing to the fact of their being kept indoors, than among the children of the same class of people living under exactly similar conditions *except* that the mothers live at home and have time to keep their children in the fresh air.

In Berlin, 1903, Newman investigated 2,701 infant deaths. Where the families were in one-room dwellings he found 1,792 deaths; in two-room dwellings, 754 deaths; in three-room dwellings, 122 deaths; in larger dwellings, 43 deaths. Can anything prove more conclusively than this, the power of fresh air has to preserve life, or the rapidity with which bad or impure air can cause death? Unfortunately for the infant and young child, the ignorance of many mothers, the superstitions and traditions of others, and the carelessness of a few, are the greatest barriers to the keeping the children in fresh air. During the past few years comparatively little has been written upon the importance of fresh air for very young children, and yet the subject of fresh air as an aid in the treatment of disease is not of recent date. In the History of the Medical Society of the State of New York, as published in the *New York State Journal of Medicine*, it is shown that in the early part of the nineteenth century the dangers of dust laden air were recognized; the influence that certain occupations exerted upon the etiology of tuberculosis was appreciated, and even at that date "cold air" was used in the treatment of typhus fever.

In one of these essays upon "The Influence of Trades, Professions and Occupations in the United States on the Production of Disease," the author shows clearly how the crowding together of children in the tenement districts produces gastrointestinal disease and death, proving that at this distant period the value of fresh air was appreciated.

In 1850 to 1860 Dr. Clark treated a very large number of cases of typhus fever in Bellevue Hospital by the fresh air method. The windows were removed; in winter stoves were placed before the open spaces to insure a slight heating of the air, but the patients were given the fresh air treatment, as we understand it in the fullest sense to-day. The results were vastly superior, the death rate very markedly lower than the mortality among the same class of patients in the same hospital at the same period in the hands of the other members of the staff where fresh air was not used. It is a well-known fact that in times of war patients treated with fresh air in tents always do better than those confined in hospitals.

The phenomena of child life have often occupied the attention of pschyologists, and new theories are formed every day for children by educators. Theoretically, they are making the super-child, soon to be the father of the superman. We, however, should be quite content if parents can be taught to appreciate the advantages accruing to the child from correct feeding, combined with fresh air and the influence they exert upon the mental and physical development of the growing child.

Everyone should be made to understand how important it is for the very young to be taught how to stand, lie down and sit properly, and that deep breathing is the proper and only sure way to secure full lung expansion.

Let us all join hands and preach fresh air; vote for open squares, endorse roof gardens, have adenoids and tonsils removed, and if we are willing as a society to endorse and work for the fresh air treatment with the same zeal and enthusiasm as we have worked for fresh and pure milk, our results will be as great a success as has been secured by our milk enthusiasts.

PHYSICAL EDUCATION FROM A PSYCHO-PEDAGOGICAL POINT OF VIEW.

By Dr. Phil. Richard Winter. Translated by Carl L. Schrader.

Two necessary interdependent forces determine the culture, reflection and will of individuals making up a community. The reflecting mind endeavors to analyze the world manifestations into its elements and aims to find the causal connections of these manifestations. A strong will which expresses itself in definite, joyful and enthusiastic action aims to utilize and enrich for life those experiences which were earned through the thoughtful connections of the reflective mind. The will which conquers obstacles creates power to do. Upon the degree of this possible working capacity of the human mind depends the cultural and soul standard of a people.

Since the reflective activity is purely meditative, it is unproductive in the household of a people. Bacon expressed this by stating, that the active life was more useful than the meditative one, a sentence which also found expression in the period of renaissance.

A people which would undertake to educate purely by reasoning would undoubtedly achieve great results in accumulated knowledge, but such procedure would also be possessed of great danger. Aside from the fact that the morality of a people is never determined by the extent of its knowledge alone, we would find that the very existence of that people would be endangered, it would be condemned to political impotency.

Prior to the years 1870-71 Germany was the nation of poets and thinkers, its political influence, however, did not extend beyond its borders. As a sort of indemnity the best Germans sought to find satisfaction in the thought of "world citizenship." They still dwelled in the same sphere in which Schiller sang: "Seid umschlungen Millionen Diesen Kuss der ganzen Welt." They were raving in their interest for the freeing of the Greeks and Poles from the yoke of tyrants. It is true this manifestation of feeling was based upon the psychological tendency of the nation, promoted and murtured by the prevalent meditative mode of education. I draw from these considerations the conclusion that the political power of a nation stands in reverse ratio to the degree of its mental capacity. In a large nation the will power commanding unused power and energy manifests itself in the ambition of increased political influence, and towards obtaining new markets for its industry. It is given voice in the council of those nations which dictate and is granted a place in the world's markets. Through this political advance new problems confront this nation and its leaders. Thus a gradual change of the relative conditions of the working capacity of the mind sets in, favoring the activity of the will rather than meditation. Where formerly thinking predominated and the calling of the scientist was the ideal one, we find today that the trade and technique have gained a prominent place in the life of that nation.

This development Germany has experienced. Since it entered the ranks of world powers in the latter third of the 19th century, its problems have changed. We are no longer the nation of poets and thinkers but a people of merchants, artisans and politicians. It is therefore the determined will we need rather than meditation and thinking. "Not the thought but the deed shapes the destiny of nations."

The difficulties and obstacles which arise and need be solved and surmounted necessitate a training of the will, an education which leads a people to the state of enjoying life by way of joyful activity. The road toward this goal is pointed out by a rational education of the body. The real purpose of man, not the one which the changing tendencies, but which the ever unchanging power of reasoning prescribes is the highest proportioned training of his forces to an entirety. For such a training liberty is essential. But besides liberty the development of man's powers demand something else, though closely related to liberty, namely multiplicity of situations. The freest and most independent man placed in monotonous environment is stunted in development. "Man can only deal with one power at a time, or better, his whole self is demanded at once for the performance of one particular activity." This seems to condemn man to onesidedness in-as-much as he weakens his energy as soon as he attempts to spread himself over more subjects. This onesidedness he escapes when he strives to unite those forces which he trained independently; also when he aims to multiply by combination, those forces through which he acts rather than the objects upon which he acts." (Humbold).

By merely awakening the imagination of a pupil, a teacher will never be able to bring about the manifold situations. "Talent forms itself in solitude, but character, only in the whirl of life."

Character does indeed shape itself more readily by what we do than by what we know. In the arduous task which confronts man again and again, that of suppressing his instincts by the power of his will, the best of teaching will avail nothing, if the will power is lacking. Man's development of character is not only determined by his inherited tendencies and the influence of environment of the external world, but mainly by his own deeds. An education must therefore offer a youth opportunity for using his powers in order to plant within him the seed for selfrespect and selfconfidence. A mentally and morally matured man sees this demand gratified in the results of his mental efforts. But since the world is of little spiritual significance to the boy, his self confidence is most easily awakened by having him feel, that his body serves him as a good physical tool.

This trend of argument naturally leads to the demand for an education of the body. Since physical education is not only essential for the youth, the question arises how the necessity may reasonably be stated for the advanced years of life.

The chief aim of physical education is not one of muscle training, but of training the commanding will, not the raising of athletes, but of men whose body will prove a willing servant of the soul. "There is nothing worse than a breed of athletes." (Euripides).

All bodily movements necessitate for their execution a greater or lesser degree of activity of entire muscle groups, and not the work of only one or even of a few muscles. By co-operation we understand that property, which locates all the muscles necessary to accomplish a certain movement and causes them to operate in unison. In every movement, therefore, a mental act precedes the physical. The more complex a movement is the more complex is the process of co-ordination. Beacuse the nervous system lacks a mental picture when unknown movements are demanded, the muscle combinations must first be learned by practice before a good response is possible.

I heartily agree with Schmidt when he calls German gymnastics a school of co-ordination. Although the abstract gymnastic forms of exercise never find direct application in life, it would be impossible for the gymnastic art to fulfill its mission, namely that of absolute control of the body in all situations, were it not for this systematic training in will power.

If gymnastic exercises are to represent beauty and grace, then they must previously be co-ordinated. For the necessary entirety we must supplement the above forms of exercise with combative exercises, such as fencing, wrestling, and also with games, exercises depending upon quickness of innervation. Circumspection, presence of mind, independence of action and determination. These qualities, which must be in evidence in all these exercises, will manifest themselves in the daily pursuit of life in those individuals who indulge in such activities. If, then, the co-ordinating will is active in these gymnastic exercises, an increased expression of will power must result from their practice. The feeling of physical disinclination, which offers itself as obstacle to the free expression of the will, is surmounted only by the training and hardening of the will power; disinclinations which arise from a number of obstructing imaginations, are overcome only by courage. Because of these obstacles we enhance power, skill and self-confidence.

This moral courage, this courage of conviction, prepares for all emergencies and dangers. It is disturbed neither before the scowling of the tyrant nor because of the fury of a raving mob.

Hence an education for courage by means of gymnastic exercises and sport, becomes important, because of its aim to strengthen the character of the individual, but more so because the solving of world problems of culture depends upon it. To be sure there are limitations to be put upon physical education. Physical courage is only then a pre-requisite for the unfolding of certain virtues, when the youth has had explained to him the feeling of moral superiority, together with a well balanced knowledge.

Not an awakening of an authority of brute strength, but an objective superiority should be the desired goal. Physical exercises which consist merely of mechanical movements and which, consequently, make no demand upon the activity of the will, are not likely to serve this purpose. The decision of the will to perform a certain known exercise suffices to set free the necessary sum of movement-stimuli with its manifold connections, apparently without volition.

It is for this reason that the mere physical performance does not satisfy or enthuse one for any great length of time. To the contrary, we have greater delight in those activities which make the greatest demand upon and give most stimuli to our will power, and on the other hand we tire very soon where this stimulation is missing.

This then condemns once for all every onesided and every professional pursuit of physical activity.

THE "ALL OR NONE" PRINCIPLE AND ITS IMPLICATIONS.*

Percy G. Stiles, Simmons College.

Note.—The ideas contained in this article were briefly sketched by the writer in "The American Journal of Public Hygiene," May 1909, Vol. XIX, p. 420.

Next to the wonder of coordination there is, perhaps, no feature of muscular activity more remarkable than our constant and precise grading of contractions to suit their purposes. An anticipated resistance is overcome by an application of force just sufficient for the work. When one raises a book from the table one does not jerk or fling it upward with an excess of energy nor does one lose appreciable time in preliminary efforts too weak to lift it. We are usually quite unconscious of this quick and perfect adaptation of the means to the end. Its failure is brought vividly to our attention when we attempt to pick up a bottle of mercury or when we move a large empty box which we are prepared to find heavy. What is the intimate mechanism of these graded responses?

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* Reprinted (with additions) from the Am. Physical Education Review.

Many years ago it was found that such gradations were not observed with cardiac muscle. If the ventricle of a terrapin heart is separated from the auricles it remains quiescent but ready to contract when stimulated. If repeated induction shocks are brought to bear upon it, the stimuli increasing or, better, diminishing in intensity, the fact appears that any stimulus which initiates a visible response develops a full-sized and typical beat. This is known as the "All or None" principle. A skeletal muscle similarly treated gives small contractions in response to certain stimuli and greater ones as the shocks are made stronger through a long range of stimulation. This contrast between the behavior of cardiac muscle and that of the skeletal type has usually been regarded as a fundamental one. Recent work makes it possible if not probable that it is quite superficial. The chief contributor to our knowledge of this matter has been Keith Lucas, an English physiologist. (Journal of Physiology, 1905, XXXIII., 125; 1909, XXXVIII., 113.)

Underlying the dynamic differences between skeletal and cardiac muscle are differences of structure. The fibre of striated muscle is an isolated unit. Around it is the sarcolemma, broken only at the point of entrance of the nerve-fibre. The single fibre may contract in response to stimulation without communicating the katabolic process to its neighbors. The cell of cardiac muscle is so linked with its fellows that a decomposition started in it will usually sweep through the entire contractile fabric of the organ.

We have been accustomed to assume that when a muscle such as the biceps shortens, the movement is the expression of the simultaneous contraction of all its fibres. If the movement is small we have imagined that each fibre has shortened by a little, if it is large we have supposed that the percentage of shortening has been greater in all its fibres. It has never been easy to see how graded stimuli can give graded responses in this sense. How could we conceive of a katabolic process initiated within the fibre which should not itself become a stimulus and precipitate a maximal discharge of the mechanism? If the fibre is like a magazine rifle in which a new portion of explosive, representing a definite amount of energy, is made ready after every contraction, how can we use any less than the whole charge available at a given moment? Dr. Lucas maintains that we cannot. It is his belief that the individual striated fibre obeys the "All or None" law—that it makes none but maximal contractions, varying of course, with its condition but not influenced by the intensity of stimulation provided only that it is above the threshold value. The gradations between the minimal movements of a muscle and its utmost shortening—or tension—are held to be merely the expression of the varying proportion of the units employed. The muscle is capable of many degrees of contraction because it is composed of a great number of elements, any fraction of which may be contracted while the rest are passive. Dr. Lucas has shown that a smoothly graded series of contractions is not obtainable from a very small collection of fibres. When a slender slip of frog's muscle is subjected to a succession of gradually increasing shocks the records show that several responses in a series may be of equal height and that an abrupt leap to a new level may follow. This is interpreted to mean that a fixed number of fibres cooperate to produce all those contractions which are of the same height and that the augmented response comes when the increased stimulus first affects certain additional fibres which were less easily excited. The reasoning is ingenious and the technique of the research is exquisite. The characteristics of the records remain the same whether the stimulation is direct or applied to the nerve.

It is too soon to say whether this view of the working of the neuromuscular mechanism will be fully accepted, but its implications are of great interest. It introduces the idea that a *muscle is really a musculature* with no necessary unity of functioning parts and that the central representation of it is probably multiple and diffuse. It seems to the writer that the conception of the fractional use of muscles is helpful in clearing up many difficulties. Take for example the question of training. When an individual improves his condition by exercise we know that his gain in efficiency is greatly in excess of any sheer increase of muscular tissue. The advance may be due in part to a betterment of quality in the muscle substance coincident with a freer circulation and lymph-flow. But we usually assume that much of the gain is due to more effective innervation. In terms of the Lucas theory it is the result of control acquired over more and more fibres. The conception of the untrained muscle is that of one in which there are always many idle elements. In such a muscle under stimulation the unused fibres might be expected to lie in curves among the shortened and thickened members.

If training increases the proportion of units under voluntary control we may attribute the result to increased command over cortical motor cells, to extension of synaptic diffusion at lower levels, or to increased facility of end-plate transmission. Cerebellar reenforcement may also be gained. In any case the improvement may be founded in part upon the development of reflexes. If for example, we suppose that one-half the fibres in a muscle are so connected as to respond to what we call the action of the will, while the remaining fibres can be reached only by impulses from spinal centers, it is plain that the contractions will grow powerful in proportion as an afferent flow of impulses is secured to spur these centers. Such an auxiliary reflex action probably results from practice. The intensity of reflex contractions as compared with those in which afferent promptings are not prominent is well shown in the recovery of the body from a threatened fall. The violence of the involuntary movements may produce painful strains and wrenchings which could not result from any deliberate effort. Camis has shown that if a muscle can be made to give reflex contractions when *either* of two afferent nerve-twigs is stimulated it will give its greatest responses when *both* are excited at once. It is his opinion that not all the spinal motor cells can be reached effectively by the single channel of approach. If this is the correct view and the motor centre is subject to fractional activity it follows that the muscle must also be fractionally stimulated. (Journal of Physiology, 1909, XXXIX, p. 228.)

By a similar assumption we can throw light upon the postponement of fatigue through interest in an occupation. There is no better instance of this than the surprising endurance displayed by slight women when dancing. How can they maintain such a degree of activity for a period of hours which they enter upon at the end of a normal day's work and which would be intolerable as a matter of routine? The matter becomes intelligible when we suppose that their strength as usually estimated is merely that of a fraction of the musculature under strictly voluntary control. A larger proportion of the fibres may be utterly removed from direct command but may be brought into play through concurrent reflexes, due in the specific case to light, music, and tactile stimuli. Indeed emotion itself may operate on the motor cortex in the fashion of a reflex stimulation. For if we suppose that the efficiency of motor discharge is determined by the number of paths bearing impulses to the cortical motor region, this number will be increased when emotion seconds volition. If the peripheral state is the essence of emotion, we have a definite source for such afferent impulses; if the state is central, the association paths are emphasized. According to older views emotional reenforcement means a more intense process in the same motor elements and a more intense resulting katabolism in the same muscle-fibres. According to the Lucas theory it means the development of parallel streams in the motor channels and the response of muscular units previously unstimulated.

If we adopt such views, subject no doubt to a good deal of revision, we can accept Dr. Lee's contention that every-day fatigue is chiefly peripheral, and still we can emphasize the importance of central factors. A muscle which appears—subjectively—to be fatigued is a muscle containing a group of fatigued fibres or end-plates, these being the ones normally most accessible to cerebral excitation. A much greater number of its fibres may be quite unfatigued but out of the range of unemotional, deliberate volition. The muscles of a fever patient may in this ordinary sense be very much fatigued, yet with a trifling rise of temperature or deepening of toxæmia the unused fibres may suddenly become responsive to central stimulation and an amazing display of energy result.

Thus we have presented to us a new picture of the conditions which may underlie the powerful contractions of muscles in delirium, hypnosis, strychnia poisoning, etc. Instead of assuming an abnormally intense process in the musculature we should perhaps simply assume a more general participation of the fibres than is usually obtainable. Back of this must lie the lowered synaptic resistance characteristic of these conditions(giving a widespread distribution of stimuli within the muscles. Under these circumstances the untrained subject may approach an athlete's strength because for the moment he possesses an athlete's extended innervation. The athlete himself when burning with fever may also show unexpected strength, but in his case there will be less margin of increase over his normal power than with the untrained person. For he has previously acquired something approaching a full command of his resources. The fibres which have been beyond his ordinary control must have been relatively few.

Dr. Lucas, we must bear in mind, has observed simple contractions in arriving at his conclusions. Human muscles are usually so stimulated as to give tenatic responses. This fact somewhat complicates the problem of analysis with which we are dealing. Sub-maximal contractions may, on his theory, be due to the tetanizing of limited numbers of fibres or to the alternating responses of distinct groups. The tremulous character of human contractions has been taken to indicate incomplete tetanus but it might result from the alternate action of sets of fibres.

Such a conception is not new but has been recognized by Boruttau as a probability and such a contraction has been designated as a 'pseudo-tetanus.' The electrical fluctuations in a nerve through which impulses generated by motor cells are passing indicate that the fibres are not synchronous in their activity. (Pfluegers Archiv," 1902, XC, p. 233.)

The writer is aware that much of the foregoing discussion would be altered in form if the idea of inhibition were introduced. He has refrained from giving place to this important factor for fear that clearness would be sacrificed. Its admission would not essentially change the main propositions in regard to the nature of muscular activity though the central conditions would appear in a somewhat different light.

TRAINING FOR RACES.

By D. M. Ferd. Krogh, M. D., Philadelphia, Pa.

Training for running, as does all training for various field events, requires a good constitution of the one to be trained, which insures perfect safety to the individual. Selection of proper persons is, therefore, essential. The one entering upon such training should be perfectly healthy and keep in good health by attending to his diet, personal hygiene and taking regular exercise.

While training for running it is not well to practice leg exercises only, but systematic exercise of the entire body should precede and accompany the special training. Although the leg muscles must of necessity be strengthened, it is equally important to have the other muscles of the body in good condition. Exercises of the trunk should be practiced because they stimulate digestion and assimilation, while exercises of the arms promote the flow of the blood and lymph. Running is especially destined to strengthen the respiratory function and heighten endurance to a great degree. Everything should be done to put and keep the one training in a good physical condition.

In training school children the trainer should take into consideration the constitution and age of the pupil. No long distance running should, under any circumstances, be indulged in by those of school age.

In training for short distance running it is well to practice regular running as an exercise daily, increasing the length of time of running gradually. If a school boy or girl is to practice for a 50, 60 or 75 yard dash the training should, if possible, begin 2 or 3 months before the event is to occur. The first weeks may be utilized by regular running for 3 minutes with a gradual increase to about 8 minutes. This will insure endurance and increase the respiratory function.

After this the run for speed should be practiced. It is also well, occasionally, to run a greater distance than intended for the race. A long stride should be aimed for and the running should take place on the ball of the foot.

The "start" must also be practiced. This is one of the most important points in training for racing. The position taken for the start is usually that of crouching. The left foot being placed with the toes at the scratch-line, and the hands on the ground on each side of the foot. The right foot is placed backward with the tip of the foot in a small hole dug for this purpose. It is said that left handed persons do better by taking the reverse position, i. e., with the right foot on the mark. The right knee is on the ground when the starter says "ready." The knee is raised on the command "get set" and the runner keeps on the alert for the report of the pistol that gives the signal to start. In practicing the start clapping of hands and the simultaneous command "go" may be substituted for the pistol shot. While at the scratch line the runner must keep cool so that he does not start too soon. This coolness and alertness is acquired by frequent practice.

The last few weeks of practicing should be devoted particularly to the start and speed, but it is well to run only about two-thirds or half the distance prescribed for the race. The full distance should be practiced only during the last week or two before the race. Care must also be taken that the arms swing naturally from the shoulders; the right arm swinging forward when the stride is made with the left leg and vice versa. The body should be held erect in a natural position; it should not lean forward and the head must not be thrown backward. The stride should be of uniform length throughout the race.

It is well not to practice the day before the race. By resting, vital energy is stored up.

When the race is about to take place the participant should warm up by jogging for a few minutes, i. e., by running about the field in a quiet manner. This will not only warm him up but also stimulate the circulation and respiration, and make the muscles more pliable. It is well not to get to the scratch too soon, and to take a number of deep breaths before the race.

While it is essential that one does not start too soon nor too late it is equally important that the runner does not stop short at the finish. He should run at full speed for a distance beyond the finish or he will lose time.

The mode of procedure in training for long distance running is somewhat different from the foregoing. Running on the entire foot is best in running more than 100 yards, while in the latter it is best to run on the fore part or ball of the foot.

No boys should be allowed to take part or train for long distance races, as the task is beyond their ability without injury to their constitution. It must be remembered that the tissues of the young are immature, and lasting harm may result from over-exersion. The age of those entering on long distance running is usually given as 19 or 20. But, in deciding on the advisability of entering anyone, much depends on the general make-up of the individual. Many young men at the age of 20 have a strong and robust physique, while others are puny and poorly developed. Selection of properly developed young men is, therefore, most essential.

In training for the 440 yard, or quarter mile race, the general hygienic principles referred to above should be observed. The runner must take good nutritious food, plenty of sleep, a daily bath followed by brisk rubbing of the skin and plenty of general exercise, avoiding over-exertion.

Training for the 440 yard run must involve running for speed as well as endurance. For the former short distances should be covered in fast time, for the latter long distances should be run in comparatively slow time. The start must also be tried frequently. The arm-swinging must be natural, from the shoulders without unnecessary motion of the body. The latter cannot be avoided by swinging the arms across the body.

The run of 440 yards necessitates good judgment as to speed and division of time. The first two-fifths should be covered at a fast rate of speed, while the third or middle fifth should be run in about the same time as the first two-fifths combined. This will insure a reserve force of energy and strength for the last two-fifths of the race. The whole foot should be put onto the ground and a good stride should be made. The swing of the legs should be directly forward, and the raising of the feet backward must be avoided. The body must be kept in a natural position and the head must not be thrown backward, as this interferes with the full and easy respiration, and guards against becoming winded. It is best to run the last 100 yards on the ball of the foot.

In running greater distances than the above, such as the five mile race, the main object should be to secure greater endurance. This may be attained by daily practice of all around gymnastics and by practicing running at a free and easy gait, such as is used in cross country running. This will assure soundness of the whole body, strength of muscles, and increase the respiratory function. It is of first importance in long distance running to guard against becoming winded. At first, comparatively short distances should be run, which must be gradually increased until the runner can cover more than the five miles without getting tired. Gymnastics, which especially develop the upper part of the body and increase the circulation and respiration should be practiced during the entire time of training.

The stride must at first be a short one and should at no time be too long, as this produces too great a strain on the heart and lungs. A free and easy gait with a good swinging of the arms must be attained. The English runners pay special attention to the arm movements, so that each arm-swing helps the body forward.

The first half mile should be run fast and then a steady pace with a small stride must be maintained. When approaching the stage of getting winded one must make an effort to keep up the race and the so called "second wind" will set in, enabling the runner to finish in good time.

The five mile runner must depend on his strength, endurance, and judgment of space and time. He must be careful never to train to the point of fatigue or exhaustion. He must not put his muscles in a state of tension until the last one hundred yards, when he puts into use all the remaining vital force and energy to win the race or at least secure a place.

◆

—CONGRESS FOR SCHOOL HYGIENE. The third international congress will convene in Paris from March 29th till April 2nd, 1910. There will be nine separate sections. In the fourth will be considered: 1. The value of play grounds for school children. 2. Demonstrations according to calendar and physiological age.

TO THE FESTIVAL COMMITTEE OF THE THIRTIETH BUNDESTURNFEST.

GENTLEMEN—In accordance with your communication of June 18th, informing me that I had been made a member of the *Beobachtungs-Ausschuss,* I was able to be present at the exercises in Cincinnati from the early morning of Thursday, the 24th, until the evening of Saturday, the 26th. This report, therefore, concerns itself only with what occurred during that period. Former service on the *Extra Beobachtungs-Ausschuss* at the St. Louis and Indianapolis Festivals, and stories of the Cincinnati Festival of twenty years ago, led me to anticipate the visit with unusual interest, and it may be said at the outset that all expectations were more than realized. In spite of adverse weather conditions, the elaborate program was carried out with a degree of success which reflects the greatest credit upon the thorough prepatory work of your Committee, and upon its remarkable skill in management.

The *procession* of Thursday afternoon, indeed merely as a spectacle and in its relation to the Festival as a whole, would have gained in impressiveness if the fourth, fifth, and seventh divisions had been altogether omitted, and if the actives in the sixth division had been massed in an unbroken column maintaining strict discipline as it passed between the reviewing stands on Government Square. The various fraternal societies, benefit associations, labor union organizations, political clubs, and national associations of foreign-born citizens, with their flags and emblems, and especially the advertising wagons that brought up the rear, robbed the parade of the significance and unity it would have possessed had there been only the military element, the school children, and the Turners in line. The actives, too, should have formed the culminating feature; but the audience was already tired when they arrived, and their open formation, split up into districts and smaller semi-independent groups with considerable spaces intervening, together with the disorder which seemed to be the rule whenever friends were recognized among the spectators, left a feeling of disappointment, intensified by the inappropriateness and the motly nature of the division which followed them.

The society competitions profited by the change which allowed them to begin on Thursday morning, before the procession and, therefore, while the men were still fresh. The separation of societies into six groups, instead of four, facilitated the handling of large numbers by reducing the size of each group, and also permitted the allotment of more time to each squad for its marching, free exercises, and field events. In the apparatus exercises of Friday morning, too, the squads averaged only about two-thirds as large as at Indianapolis, so that there was less waiting in line for one's turn. It is worth noting that the program called for the trying out of 210 contestants in the third grade, 662 in the second, and 571 in the first or lowest—a total of 1,443 men! The endeavor to develop in the societies a high degree of all-around efficiency on the part of the greatest possible number of members, instead of top-notch performances in single lines by a few individuals, was apparent in the comprehensive nature of the test—marching exercises, squad work in the portion of the free exercises of the mass drill, exercises on three pieces of apparatus, and two unlike types of field work. Undue specialization in apparatus work is further avoided by publishing two exercises each for the horizontal bar, parallel bars, and horse, and selecting after the Festival has begun the one of these to be actually used in competition. The problem of putting all societies on an equal footing and inducing each to share in the competitions and do its best in them, is happily solved by the creation of groups based on membership, with a fixed percentage of the membership necessary in each squad entered, by selecting suitable apparatus exercises for each of three grades of performers, and by recognizing with a certificate, or wreath, or both, all work which receives from the judges an average mark of 65 per cent. or over.

A most admirable rule governing *individual competitions* is that which debars from them all men who do not share also in the procession, the mass exercises, and the society competitions. The fact that the marks won in the apparatus exercises and field events of the society competitions are those which determine individual rating as well constitutes a double incentive, made more effective by the practice of awarding certificates to all who reach a grade of 75 per cent. The innovation of requiring each contestant to present before judges a self-chosen arrangement of free exercises serves to draw attention to a valuable means of training and sets ingenuity at work to devise useful and artistic combinations. It was the nature and method of these competitions, rather than any particular excellence noticed in the performances, which called for admiration.

From an educational point of view the *modal exercises* were the most noteworthy feature of the Festival. Their number and variety must have been astonishing to any one not familiar with the ability, thorough training, and progressive spirit of the teachers of the *Turnerbund.* The value of the evening performances in the city, as a means of bringing directly before a large proportion of the population an adequate representation of the work of the societies, more than justified all the labors and expense they entailed upon your Committee. It would be difficult to imagine more interesting combinations or more vigorous and exact execution of them than were exhibited by the North Cincinnati Turnverein classes of boys and girls under Mr. Seuss and of women under Miss Kolling, the Davenport Turngemeinde actives under William Reuter, those of the Pittsburg District under C. F. Koch, and of the Germania Turnverein in Los Angeles under Karl Ross, and the seniors of the St. Louis District in their dumb-bell drill. I was especially pleased with the intelligent choice of appropriate forms of motion in this last event, and as a performance it surpassed anything I have hitherto witnessed in senior classes. Out of the thirty sets of modal exercises observed, the women's classes presented twelve or shared in them with the men, the seniors three, the boys' and girls' classes one each, and the actives fifteen. This fact sufficiently indicates the growing importance attached to the physical training of girls and women by the *Bund.* The different kinds of work shown deserves mention also. There were marching exercises, dancing, and free swimming exercises; exercises with wands, dumb-bells, Indian clubs, flags, and long wands; exercises on the long horse; pyramids, and class exercises in boxing and in fencing with single stick and sabre. If it were possible to make a more rigid selection among model exercises proposed for such occasions, accepting only those of unusual merit and best suited for presentation on so vast a stage and before such large audiences as were offered at the Baseball Park and the Fairgrounds, this might serve a double purpose by stimulating the societies to even better work and by holding the interest of spectators who now find the program sometimes over-crowded and monotonous.

The *exercises by pupils in the public schools,* shown at the Baseball Park on Friday afternoon, were remarkable chiefly as illustrating the capacity for management which throughout the entire Festival was assembling and manipulating large numbers with nothing but their own volition to bring them to time and place. A crowning instance of the same thing was furnished by the *mass exercises* of Saturday afternoon. Here the accurate spacing on the field and the uniform execution of movements left nothing to be desired, and the march of the actives to and from their places possessed an impressiveness wholly lacking in their section of the procession on Thursday. Doubtless the preliminary rehearsals by the seniors and women contributed to the excellent showing they made on this occasion. To *Fest-Turnwart* Seuss, whose exacting duties were performed day after day with such conspicuous and splendid efficiency, a laurel wreath of praise is plainly due; and much of the credit for the excellent showing made in the model and mass exercises must also be given to Chas. Esberger, Jr., whose enthusiasm and good nature seemed beyond the reach of fatigue, and his intelligent direction of the music only less helpful to the performers than the efforts of the particular leader in each event.

Respectfully submitted,
Fred Eugene Leonard,
Professor of Physiology and Physical Training
and Director of the Men's Gymnasium in Oberlin
College.

Oberlin, Ohio, October 16, 1909.

Hold your Head high.

Success is in the blood. There are men whom fate can never keep down—they march forward in a jaunty manner, and take by divine right the best of everything that the earth affords. But their success is not attained by means of the Samuel Smiles- Connecticut policy. They do not lie in wait, nor scheme; nor fawn, nor seek to adapt their sails to catch the breeze of popular favor. Still, they are ever alert and alive to any good that may come their way, and when it comes they simply appropriate it, and tarrying not, move steadily on.

Good health! Whenever you go out of doors, draw in the chin and fill the lungs to the utmost; drink in the sunshine; greet your friends with a smile, and put soul into every hand-clasp.

Do not fear being misunderstood; and never waste a moment thinking about your enemies. Try to fix firmly in your own mind what you would like to do, and then without violence of direction you will move straight to the goal.

Fear is the rock on which we split, and hate the shoal on which many a barque is stranded. When we become fearful, the judgment is as unreliable as the compass of a ship whose hold is full of iron ore; when we hate, we have unshipped the rudder, and if we ever stop to meditate on what the gossips say, we have allowed a hawser to foul the screw.

Keep your mind on the great and splendid thing you would like to do; and then, as the days go gliding by, you will find yourself unconsciously seizing the opportunities that are required for the fulfillment of your desire, just as the coral insect takes from the running tide the elements that it needs. Picture in your mind the able, earnest, useful person you desire to be, and the thought that you hold is hourly transforming you into that particular individual you so admire.

Thought is supreme, and to think is often better than to do.

Preserve a right mental attitude—the attitude of courage, frankness and cheer.

Darwin and Spencer have told us that this is the method of creation. Each animal has evolved the parts it needed and desired. The horse is fleet because he wishes to be; the bird flies because it desires to! the duck has a web foot because it wishes to swim. All things come through desire and every sincere prayer is answered; we become like that on which our hearts are fixed. Many people know this, but they do not know it thoroughly enough so that it shapes their lives. We want friends, so we scheme and chase 'cross lots after strong people, and lie in wait for good folks—or alleged good folks—hoping to be able to attach ourselves to them. The only way to secure friends is to be one. And before you are fit for friendship you must be able to do without it. That is to say, you must have sufficient self-reliance to take care of yourself, and then out of the surplus of your energy you can do for others.

The individual who craves friendship, and yet desires a self-centered spirit more, will never lack for friends.

If you would have friends, cultivate solitude instead of society. Drink in the ozone; bathe in the sunshine; and out in the silent night, under the stars, say to yourself again and yet again, "I am a part of all my eyes behold."

And the feeling that will come to you that you are no mere interloper between earth and heaven; but you are a necessarey part of the whole. No harm can come to you that does not come to all, and if you shall go down it can only be amid a wreck of worlds.

Like old Job, that which we fear will surely come upon us. By a wrong mental attitude we have set in motion a train of events that ends in disaster. People who die in middle life from disease, almost without exception are those who have been preparing for death. The acute tragic condition is simply the result of a chronic state of mind—a culmination of a series of events.

Character is the result of two things, mental attitude and the way we spend our time. It is what we think and what we do that make us what we are.

By laying hold on the forces of the universe, we are strong, with them. And when you realize this all else is easy, for in your arteries will course red corpuscles, and in your heart the determined resolution is born to do and to be. Carry the crown of your head high. We are gods in the chrysalis.—*Elbert Hubbard.*

Vermont Heating and Ventilating Requirements.

According to regulations adopted by the State Board of Health of Vermont, September 20 last, the Green Mountain State has placed itself in line with Massachusetts, New Jersey, New York and Pennsylvania in the heating and ventilating requirements for schools or "schools and other buildings," in force in these States.

The Vermont requirements apply to school houses, hospitals and other public buildings, but public buildings, as defined by the State laws, include churches, school buildings, hotels more than two stories high and places of amusement more than one story high, and buildings, factories, mills or workshops more than two stories high in which persons are employed above the second story. This act, Chapter 225, entitled, "Preservation of Public Health," in which "public buildings" are defined (Section 5412) also contains the authority under which the State Board of Health is empowered to make regulations regarding heating and ventilating, as well as lighting and sanitation.

Following are the new heating and ventilating requirements:

a. The heating apparatus must be of sufficient capacity to warm all rooms to 70° F. in any weather.

b. With the rooms at 70°, and a difference of not less than 40° between the temperature of the outside air and that of the air entering the room at the warm air inlet, the apparatus must supply at least 30 cu. ft. of air per minute for each person accomodated in the rooms.

c. Such supply of air should so circulate in the rooms that no uncomfortable draft will be felt, and that the difference in temperature between any two points on the breathing plane in the occupied portion of the room will not exceed 3°.

d. Vitiated air in amount equal to the supply from the inlets should be removed through the ventiducts.

e. The closets and fixtures must be so arranged and ventilated that no odors therefrom will be perceived in any portion of the building.

To secure the approval of the State or local health officials of plans showing methods or systems of heating and ventilation, the afore-mentioned requirements must be guaranteed in the specifications accompanying the plans. In schoolhouses, hospitals and other institutions, the number of occupants intended for each room should be given, and in places of assemblage the arrangement of seats and aisles should be shown on plans.

As 40 pupils are as large a number as one teacher can well instruct, the rooms, it is specified, shall be 32 x 28 x 12 ft. high, giving from 200 to 300 cu. ft. of air space and 20 sq. ft. of surface area for each pupil.

The windows must be numerous, large enough, and so arranged as to give ample light to every part (and corner) of the room. The window space should be one-fourth of the floor space, and must be not less than one-fifth. There must be no more space between the top of the window and the ceiling than is required to finish the building, and the window sill must be 4 ft. from the floor.—*Heating and Ventilating Magazine.*

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NOTES AND COMMENTS.

—IN OUR LAST NUMBER we spoke of a new German system for physical improvement, and wondered what was to come next. Well, here it is. The incentive to make a study of this new aspirant came through Dr. Joseph Neff, the director of the department of Health and Charities in Philadelphia, to whom the following circular had been sent:

THE 20TH CENTURY RHYTHMIC BREATHING CRUSADE FOR THE PREVENTION OF DEFECTIVE BREATHING AND TUBERCULOSIS IN CHILDREN.

Organized February 6, 1904; chartered March 27, 1907. Endorsed by The American International Congress, (Meeting in joint session with

Test Case From St. George's Church Tuberculosis Clinic, New York City.

Same Boy After Two Week's Training in Olfactory Nerve Influence on Respiration.

New York Medico-Legal Society), November, 1906. The plates on this page illustrate a test case made for Commissioner of Health, New York City. Internationally recognized as one of the most important educational movements of the 20th century, one that will leave its imprint on coming generations.

At the International Congress on Tuberculosis, Washington, D. C., September, 1908, the work of this Crusade was presented by its founder, Dr. E. Noble, as first aid in better lung development in children, plus Olfactory Nerve Influence on Respiration, where *living exhibits,* (prepared under test conditions,) established for all time, Dr. Noble's claim to an important advance in Nasal Physiology, and its rapid efficiency in curing Defective Breathing and preventing Tuberculosis in the child or adult. The address was repeated with stereopticon, and a philanthropic member of the Congress presented a special prize.

This Crusade has the unique distinction of being self supporting. It has no paid officers. The sale of the Crusade Text Book meets its financial needs. Its membership is free—each Crusader constituting a new link in an endless chain of Service to Humanity.

Its Motto: "The Foundation of every State is the Education of its Youth."

OBJECT OF THE CRUSADE.

To establish centers in all large cities, where parents and teachers may obtain free scientific instruction and practical suggestions for the prevention of nasal and pulmonary troubles in children.

The fullest investigation of this Crusade by Surgeons-General of the Army, Navy and Marine Hospital Service is invited. And the Directors of this Crusade and organization cordially invite the investigation and cooperation of all State and Municipal Boards of Health and Education, also that of Foreign Governments.

As fullest investigation was courted Dr. Walter Cornell, one of the medical inspectors assigned to special work in the Philadelphia schools, and Mr. William Stecher attended the first meeting of a class which had been formed for the purpose of learning an art which promised such wonderful results through the use of apparently very simple and inexpensive means. Our hopes to find a short cut to health and beauty were, however, rudely shattered and, as the following newspaper report of this meeting shows we were left to work out our own salvation. Perhaps other cities may be more susceptible to newer ideas than "slow" Philadelphia, and it is only to aid them and to keep from them the fate of Philadelphia that we reprint the following:

"The progress of "The 20th Century Rhythmic Breathing Crusade for the Prevention of Defective Breathing and Tuberculosis in Children" in Philadelphia ceased abruptly yesterday when the founder and director of the movement, Dr. Emily Noble, of New York, became offended at what she designated opposition from men whose presence at her demonstrations was not desired, and announced her intention of leaving this city to its fate.

Dr. Noble's lecture on correct breathing, which was delivered before more than a score of school teachers and principals in the assembly hall of Friends' Select School, was the first of what was to have been a series of seven, admission to the lectures being $5. Mr. William Stecher, director of physical training in Philadelphia public schools, and Dr. Walter Cornell, assistant to Dr. Neff, of the Bureau of Public Health and Charities, attended the meeting, accompanied by two small boys, incorrect breathers, who were brought at Dr. Noble's request, as examples by which she might demonstrate her system.

The keynote of Dr. Noble's method appeared to be the stimulation of the olfactory nerve bulb on rising in the morning, by washing the nostrils, and thus at once awakening the lungs to full activity after the partly dormant state into which they fall at night. Dr. Noble pointed out the importance of proper breathing, declaring that in this country it was a lost art, the lack of which was causing countless cases of tuberculosis, curvatures, catarrh, distended adenoids and tonsils and numerous other disorders all preventable by "two minutes each day of nasal hygiene."

Unfortunately, the speaker saw fit to use one of the small boys as an illustration of the effects of a defective system of physical training, asserting that his poor lung development and consequent predisposition in tuberculosis was largely due to breathing exercises "not merely artificial and defective, but positively harmful. The lower part of the lungs is compressed and rendered useless by this forced muscular breathing, and the net result of the exercise is for harm."

Mr. Stecher and Dr. Cornell warmly defended the system of physical training used in our public schools and insisted that the lad's lungs were contracted by curvature of his spine, denying that the curvature was merely incidental to incorrect breathing.

A heated argument ensued, which Dr. Hyatt, principal of Friends' Select School, moved to discontinue, so that Dr. Noble might proceed with the lesson. The motion was unanimously carried and met with the following announcement from the doctor:

"I refuse to go on with my course and shall leave this city and carry on my work in places where I have no such opposition to contend with. I will not conduct the lesson after having been discredited. Each of you can take back her little $5."

—IN THIS ISSUE we publish an article on "Fresh Air" by Dr. E. E. Graham. While written primarily for physicians it will, nevertheless, be of great interest to our readers in again calling attention to the value of fresh air in increasing one's power of resistance. Let your superintendents, directors, school architects, principles, teachers (yes, janitors) read articles of this character, in order to educate them to the standpoint of really appreciating the value of fresh air as a hygienic and educational measure of great importance.

—AN EFFORT is being made by the Philadelphia Physical Education Society to bring about a better feeling between the different societies and the individual members composing the national association. It is believed that a few amendments to the constitution will do this. A circular explaining the stand of this society and submitting the proposed amendments will, some time in February, be sent to all local societies, affiliated societies and members of the national council. Individual members desiring copies may have these by addressing the secretary, Miss Evaline Young, 2046 North Park Ave., Philadelphia.

—THE ATTENTION of our readers is called to Mr. Percy G. Stiles' article in this issue, "The 'All or None' Principle and Its Implications." We know of no article published recently that helps to a better understanding of some of the more intricate phases of muscular activity which are constantly presenting themselves to the teacher of gymnastics.

—A RATHER novel aspect of the smoke problem in industrial centers is presented in a consular report from Germany, where observations have been made of the lessened sunshine due to smoke and fog, both of which are traced to imperfect and incomplete combustion of coal. Statistics have been collected for some time past which demonstrate how little sunshine falls to the lot of the residents in industrial centers. Thus, one German city, Chemnitz, enjoys during the months of December and January 156 hours of sunshine out of the 508 which are theoretically possible, or only 30%. During the entire year the sun shines there only 44% of the number of hours it is above the horizon. In other German cities the figures run from 28% to 42%.

Comparing the situation with that in London, the English capital easily leads in the number of foggy days. It is significant, however, that London's foggy days during December, January and February have increased from 18 to 31 during the last half of the past century.

The investigation in Germany is being made at the instance of societies which are organized to combat tuberculosis, with the distinct view of securing more perfect processes of combustion, the cheapening and increased use of gaseous fuel and a greater utilization of electricity.

—A REMARKABLE result of the agitation for better ventilation of railroad coaches is reported by travelers on the Erie Railroad. As a concession to the "fresh-air cranks" among its patrons, the road has recently added to its suburban service a "fresh-air car," so labeled, and carrying a conspicuous notice that "the temperature of this car may be regulated to suit the occupants." The regulation involves the opening of perhaps half of the windows, and the consequent sweep of frosty night air through the car in gusts. It remains to be stated, however, that at this writing the car has been in service for several weeks, and is crowded to the doors each morning and night.—*Heating and Ventilating Magazine.*

Extracts from "Physical Education," London, England.

THE FRENCH PHYSICAL EDUCATION CONGRESS.

The 73rd Congress, in the above important subject, organized by the French Union of Gymnastic Societies, took place in Paris last month and was a pronounced success, the result of enthusiastic co-operation of all concerned, and the personality of the President, M. Charles Cazalet. The business part of the programme took place in the Lecture Room of the Sorborne University. The general report showed what a live thing the Union really was and how the work done had increased year in year out. The question of taking part next June in the National Physical Recreation Society Competition was put and carried nem. con. amidst great cheering. It was a very interesting function for a foreigner to witness, and one wondered how long we were going to lag behind (in patriotic gymnastics) Continental countries?

The official Banquet took place in the splendid saloon of the Hotel Continental, at which nearly 400 ladies and gentlemen sat down. An unpleasant, and what might have been a fatal occurrence, took place in the Hotel courtyard; a fanatical colonial soldier shot at General Verand, mistaking that gallant soldier for the Minister of War, General Brun, who was to attend and preside at the banquet. Hearty sympathy for the wounded officer was expressed and felt, and felicitations offered to M. le General Brun. The function was carried through with the usual good organization characteristic of similar French fetes, that is with wonderful attention to detail.

It was very pleasant to meet again old friends such as Messrs. Griffiths, Arras; Eugene Mignon, Brussels; M. Marot, Bordeaux; Braseur and Kayser of Luxembourg; Henry, Paris; M. M. Wachmar, Lachaud; and last but certainly not least, M. Avoiron, editor and chief of "Le Gymnaste," all enthusiastic in the cause of physical education; believing it to be one of the necessary educational pillars to support, efficiently, the burden called the State!

The speeches were of a high order, and never too long, and the military band excellent.

The British delegates remarks were again accorded the heartiest of receptions, and the mention of the visit to London evoked great cheering, especially at the alluring picture presented by the speaker of the possible arrival from England next June in the Capital of M. Cazalet the President, attended by a body guard of victorious gymnasts, with the British 200-Guinea Challenge Shield under his left arm!

A very pleasant evening was spent at a private little dinner party given by the President at the Palais Royal, a fitting termination to a brilliant festival.

The French gymnasts will be heartily welcomed in London (and so will their brother gymnasts and good friends, the Czecks, if they decide to visit us), and let us hope that the gathering will result in more than a competition for gymnastic supremacy.

EXTRACT OF THE CONDITIONS OF THE 200-GUINEA INTERNATIONAL N.P.R.S. CHALLENGE SHIELD COMPETITION, 1909-1910.

COMPETITIVE.

10.—Each member of the eight shall shew one voluntary exercise upon the (high) Horizontal Bar. No somersaults allowed. 30 marks the highest maximum for each competitor, divided as follows:—10 for agility, 10 for grace, and 10 for variety and skill.

11.—Each "eight" shall shew a series of Free Exercises to musical accompaniment. The exercises to last over 5 and under 8 minutes. Maximum marks for the "eight," 240, divided as follows.—60 for grace, 60 for variety, 60 for precision, and 60 for beneficiality.

12—Each member of the "eight" shall shew one "voluntary" combination exercise upon the Parallel Bars. 30 marks the highest maximum for each competitor, divided as follows:—10 for grace, 10 for strength and 10 for skill and variety. Visiting teams can always claim the use of the home team's apparatus.

13.—Each "eight" shall show Running High Jumping. The Jumps to be made over a lath, spring taken from the bare floor. One mark per man allowed for 3-ft. 6-in. (the measurements to be made with a measured stick, from the centre of the lath, and one mark for every additional inch. The lath to be 10 to 11-ft. in length between the stands. Each team will be allowed 30 minutes in which to score as many marks as possible. The teachers of the teams and judge or judges to assist in raising lath as required, &c., &c. In addition, two timekeepers (one from each term) must be appointed. In all four items of the Competition, the visiting team to have the choice of competing first or last. Each team may (at their own risk) commence jumping at any height above 3-ft. 6-in., but each competitor must continue to jump each time the lath is raised. Should any of the "Eight" fail after two trials, the unsuccessful competitors must retire from the jumping competition, scoring nothing. No jump will score unless the competitor alights first upon his feet. The entire team must, however, commence at same height.

Two trials only allowed for each jump, 30 marks highest maximum for each competitor. The Society (by a resolution passed unanimously at a Special General Meeting, June 27th, 1898), considers indoor jumping a gymnastic item.

14.—The Competition must be contested in the following order, viz.:—Horizontal Bar; Mass Drill; Parallel Bars; High Jump. Competitors must compete alternately in items 1 and 3. All Competitors must be attired in full gymnastic costume, viz.: trousers, or if knickerbockers are worn, long stockings must also be worn to cover the knees. The vest must also cover the armpits. During the competition, competitors are not permitted to change from long trousers to knickerbockers or vice versa.

16.—The "Eight" obtaining the highest aggregate number of marks in the Final to be declared the winners, and to hold the Shield for six months from date of Final Tie Contest; then to be given up on demand, during which time satisfactory security must be given to the Council for its safety.

18:—The judges for all the Competitions will be appointed by the Executive Committee.

20.—Foreign teams will be invited to take part in the Final Tie, if accepted they will meet the winner of the British Semi-final. In that case the Society reserves to itself the right to make any special rules and conditions they may deem necessary, due notice of which will be given.

EUGENE SULLY, Hon. Secretary.

Office: 12, New Broadway, Ealing, London, W.
September, 1909.
(N. B.—Teams are requested to carefully read Rule 20.)

(LONDON DISTRICT.)

CIVIUM VIRES CIVITATIS VIS.

NATIONAL PHYSICAL RE-CREATION SOCIETY.

Established 1886 for the Promotion of Physical Education and Recreation.

PATRON:—HIS MAJESTY THE KING.

CONDITIONS OF THE 25-GUINEA CHALLENGE SHIELD WORKING GIRLS' MUSICAL DRILL COMPETITION FOR 1910.

2.—Each team shall be represented by Eight Members, who shall be bonafide working girls over 17 years of age.

3.—Members of the winning team are debarred from entering the next year, but a team composed of entirely different persons from the same club may enter and compete.

4.—Each "Eight" shall give a combined exhibition of Dumb-bell Exercises, with or without music. Time allowed, over five and not exceeding eight minutes. Marks will be awarded for precision, grace and beneficiality. 168 marks highest maximum.

5.—Each "Eight" must take part in the Obligatory Short Wand Exercises, to be performed en masse. Length of Wands to be 36-in. This will take place immediately after the Competition is concluded, and while the judges are adding up the marks. An illustrated chart of exercises, giving the music and words of command, will be sent to all competing clubs.

6—The "Eight" obtaining the highest aggregate number of marks in the (competition) Dumb-bell Drill to be declared the winner, and to hold the Shield for one year, satisfactory security being given meanwhile to the Council for its safety. The winning team, teacher and pianiste, will receive the Society's silver medal.

7.—The Society reserves the right to refuse the entry of any team.

8—The decision of the Judge or Judges to be absolutely final.

9.—Entrance fee for each team from classes already affiliated, 2s6d. To non-affiliated classes, 7s6d (which includes affiliation fee). 2s6d for each additional team competing. The affiliation fee (5s-d) is annual. Entries close April 15th, 1910.

10.—The Judges for the Competition will be provided by the National Physical Recreation Society. The Contest will be held on Saturday, May 7th, 1910, in the Northampton Institute, Clerkenwell E.C. The winning team may be called upon to drill on June 18th, at the Northampton Institute, upon the occasion **of the 200-Guinea International Shield Contest** between France, England, and probably Bohemia.

N. B.—The above rules are for the Junior Challenge Shield Competition except that the age is over 14 and under 17 and the time for entries to be received is March 1st, 1910.

EUGENE SULLY, Hon. Secretary.

12, New Broadway, Ealing, W.

EXTRACTS FROM EUROPEAN PERIODICALS.

By CARL L. SCHRADER, Cambridge, Mass.

—GYMNASTIC FESTIVAL IN ITALY. The next national festival will be held in Turin in May, 1911, in connection with the world's fair. At the same time and at the same place the 5th international tournament occurs, which was organized by the European gymnastic organizations.

—EXPLANATORY COURSE OF PHYSICAL EDUCATION. Such a course is to be held in the Prussian institute and is to serve the purpose of giving school superintendents an opportunity to know physical education in its most modern aspects. The Minister of Culture has ordered that such a course be inaugurated for 60 superintendents. The government pays all expenses. (What a shake-up there would be in some cities if our government would do likewise with our superintendents.—Ed.)

—RAVENSTEIN CELEBRATION. On Dec. 4th the city of Frankfurt celebrated the 100th birthday of August Ravenstein. He was originally bookseller, later topograph and cartograph and started the world famous geographical institute of Frankfurt. He was also an ardent worker for the physical welfare of the young, founding in 1833 a gymnastic club and in 1845 the "society for the bodily education of youths." In 1863 he wrote the well known "Volksturnbuch." He died July 31, 1881.

—OLYMPIC GAMES. The British Olympic Association has decided not to participate in the Olympic games to be held in Athens next summer. This decision has lost its significance however, since the games, because of political conditions are not to be held. Nevertheless it seems to be the object to concentrate the interest of English sporting organizations upon the International Olympic games which occur every four years and are to be held in Stockholm in 1912.

—SWIMMING AND SKATING IN THE SCHOOLS OF SWITZERLAND. These two occupations have been added to the required school work. The swimming begins with the age of six and ends with the age of fourteen. Only upon a physician's certificate may children be excused from these lessons. Every child is required to pass an examination in swimming. In Zurich, where this plan has been in operation, very few sickly children are reported.

—"HOW NUDE DANCERS ARE CREATED." An impresario tells the following in a Vienna journal: I once knew a young woman, who was a "nothing." She was handsome however, and well built. I took her to a Berlin theatrical manager. He was astonished at the audacity of expecting him to permit this woman to dance nude on the stage.

It was accomplished, nevertheless. We went to a woman of high social standing who was an enthusiastic lover of art. I told her a romantic story about this young woman. How her father had been an officer in the English army and died during his service in India, leaving this daughter an orphan. She had watched and studied the Indian dancers in the temple and had acquired their art. The woman offered her home for a private performance to which guests were invited, among them leading journalists. Everybody spoke and raved of the beauty of grace and body, but no one suspected any business enterprise, least of all the hostess. A few days later the papers reported that the manager X of the theatre had succeeded in persuading this young woman to accept a brief engagement. The trick was done. Now the police stepped in which added to the advertisement. Miss X had to be draped in a thin veil, which again made the performance more attractive, and full houses were the result. Thus the era of nude dancing had its start.

—PUBLIC BATH. The city of Nuremberg is building etaoin Gm municipal bath house, containing three separate tanks. The cost is 1,444,000 marks.

BOXING.

Model Exercises shown by 46 active Turners of the Fittsburg District at the National Gymnastic Festival, held in Cincinnati, June 1909.

By C. F. Koch.

The class is arranged in couples, standing at a convenient distance.
Abbreviations: R. = right, L. = left.

GROUP I.—(All Facing Front.)

1.

On guard (1-2), R. lead for face and cover chin with L. arm (3-4). on guard (5-6), starting position (7-8), same with L. lead for face and cover chin with R. arm (9-16).

2.

On guard (1-2), parry R. lead for face with L. arm (3-4), on guard (5-6), starting position (7-8), parry L. lead for face with R. arm (9-16).

3.

On guard (1-2), R. lead for body and cover chin with L. arm (3-4), on guard (5-6), starting position (7-8), same with L. lead for body and cover chin with R. arm (9-16).

4.

On guard (1-2), parry R. lead for body with L. arm, extending L. arm obliquely forward, downward, (3-4), on guard (5-6), starting position (7-8), parry L. lead for body with R. arm (9-16).

5.

On guard (1-2), advance (3-4), retreat (5-6), starting position (7-8), repeat same (9-16).

As 5 with ¼ turn L. while assuming guard on (1-2), and ¼ turn R. on (7-8), when assuming starting position (1-8), as 5 with ¼ turn R. (9-16).

6.

On guard (1-2), leap to the front (3-4), leap to the rear (5-6), starting position (7-8), repeat same (9-16), as 6 with ¼ turn L. (1-8), as 6 with ¼ turn R. (9-16).

7.

On guard (1-2), advance (3-4), R. lead for face (5) resume guard (6), L. lead for face (7), resume guard (8), retreat (9-10), parry R. lead for face with L. arm (11), resume guard (12), parry L. lead for face with R. arm (13), resume guard (14), starting position (15-16).

8.

As 7 but lead R. and L. for body and parry R. and L. lead for body (1-16).

9.

As 7 with ¼ turn left on 1-2, and ¼ turn right on 15-16 (1-16).

10.

As 8 with ¼ turn R. on 1-2, and ¼ turn L. on 15-16, (1-16).

GROUP II.

1.

No. 1.	No. 2.
Face partner and assume guard (1-2), R. lead for face (3), (cover with L. as before), resume guard (5-6), starting position (7-8), same with L. lead for face (9-16). As No. 2, parry R. and L. lead for face with L. and R. arm (1-16).	Face partner and assume guard (1-2), parry R. lead for face with L. arm (3-4), resume guard (5-6), starting position (7-8), parry L. lead for face with R. arm (9-16). As No. 1, lead R. and L. for face (1-16).

2.

R. and L. lead for body (1-16), parry R. and L. lead for body with L. and R. arm (1-16).	Parry R. and L. lead for body with L. and R. arm (1-16), R. and L. lead for body (1-16).

3.

On guord (1-2), advance (3-4), retreat (5-6), starting position (7-9), repeat (9-16), on guard (1-2), leap to front (3-4), leap to rear (5-6), starting position (7-8), repeat (9-16).	On guard (1-2), retreat (3-4), advance (5-6), starting position (7-8), repeat (9-16), on guard (1-2), leap to rear (3-4), leap to front (5-6), startng position (7-8), repeat (9-16).

4.

No. 1.	No. 2.
On guard (1-2), advance (3-4), R. lead for face (5), resume guard (6), L. lead for face (7), resume guard (8), retreat (9-10), parry R. lead for face with L. arm (11), resume guard (12), parry L. lead for face with R. arm (13), resume guard (14), starting position (15-16).	On guard (1-2), retreat (3-4), parry R. lead for fare with L. arm (5), resume guard (6), parry L. lead for face with R. arm (7), resume guard (8), advance (9-10), R. lead for face (11), resume guard (12), L. lead for face (13), resume guard (14), starting position (15-16).

5.

As exercise 4 but advance and lead R. and L. for body (1-8), retreat and parry R. and L. lead for body (9-16).	As exercise 4 but retreat and parry R. and L. lead for body with L. and R. arm (1-8), advance and lead with R. and L. for body (9-16).

GROUP III.

1.

No. 1.	No. 2.
On guard (1-2), R. lead for face with lunge forward left (3), parry R. swing for jaw with L. arm (4), resume guard (5-6), starting position (7-8), L. lead for face and parry L. swing for jaw with R. arm (9-16). As No. 2 (1-16).	On guard (1-2), bend head sideward left (3), swing R. arm for jaw (4), resume guard (5-6), starting position (7-8), reverse by bending head sideward right and swing L. arm for jaw (9-16). As No. 1 (1-16).

2.

On guard 1-2), R. lead for face with lunge forward L. (3-4), resume guard (5-6), starting position (7-8), same with L. lead for face (9-16). As No. 2 (1-16).	On guard (1-2), bend trunk forward and cover face with R. arm (3), counter with L. arm for body (4), resume guard (5-6) starting position (7-8), same but cover face with L. arm and counter with R. arm for body (9-16). As No. 1 (1-16).

3.

No. 1.	No. 2.
On guard (1-2), R. lead for face (3), parry R. uppercut by flexing L. arm height of chin and bending trunk backward (4), resume guard (5-6), starting position (7-8), same with L. lead for face and parry L. uppercut with R. arm (9-16). As No. 2 (1-16).	On guard (1-2), parry R. lead for face with L. arm (3), uppercut with R. for face (4), resume guard (5-6), starting position (7-8), same but parry L. lead for face with R. arm and uppercut with L. (9-16). As No. 1 (1-16).

4.

On guard (1-2), R. lead for face (3), leap to rear (4), resume guard (5-6), starting position (7-8), same with L. lead for face (9-16). As No. 2 (1-16).	On guard (1-2), parry R. lead for face with L. arm (3), counter with R. for solar-plexus (4), resume guard (5-6), starting position (7-8), same but parry L. lead for face with R. arm and counter L. arm for solar-plexus (9-16). As No. 1 (1-16).

GROUP IV.

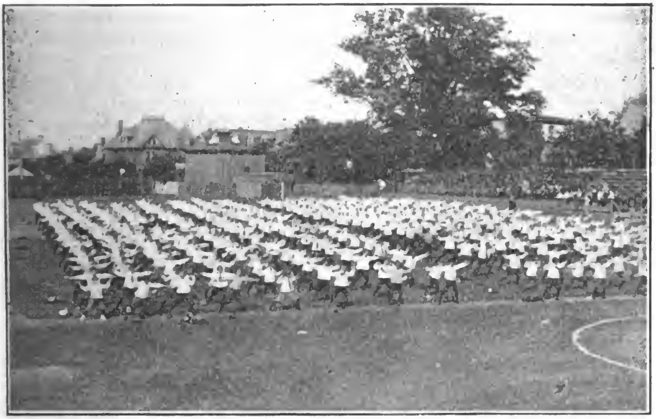
	No. 1.	No. 2.
1.	On guard (1-2), R. swing for head (3), bend trunk forward (4), L. swing for head (5), bend trunk forward (6), starting position (7-8), repeat 3 times (9-32).	On guard (1-2) bend trunk forward (3), R. swing for head (4), bend trunk forward (5), L. swing for head (6), starting position (7-8), repeat 3 times (9-16).
2.	On guard (1-2), R. lead for face (3), parry R. lead for face with L. arm (4), as 3 (5), as 4 (6), R. lead for solar-plexus (7-8), leap to rear (9-12), leap to front (13-14), starting position (15-16), as No. 2 (1-16) repeat all (1-32).	On guard (1-2), parry R. lead for face with L. arm (3), R. lead for face (4), as 3 (5), as 4 (6), drop on knees (7-12), resume guard (13-14), starting position (15-16), as No. 1, (1-16), repeat all (1-32).
3.	On guard (1-2), R. lead for face with lunge forward R. (3-4), resume guard (5-6), side step L. (7-8), side step R. (9-10), as 3-4 (11-12), drop backward on floor (13-16), rise to kneeling position (hands on floor) (1-8), roll over again (9-16), all jump quickly to feet and assume fundamental position.	On guard (1-2), side step L. (3-4), side estepe R. (5-6), R. lead for face with lunge forward R. (7-8), resume guard (9-10), side stepe L. (11), uppercut R. for face (12), leap to the rear (13-16), remain in this position until No. 1 has resumed the fundamental position.

Salutation L. by all (1-8).
Salutation R. by all (9-16).

FIELD DAY OF A PUBLIC SCHOOL.

By PHILIP G. LEWIS, Philadelphia.

The first Field Day of the Marshall (Boys) School was held on the grounds of the Frankford Base Ball Club in Frankford, Philada., in June, 1908. The object was to have the parents and teachers meet, and to give the pupils an outing, this outing to be in the form of a gymnastic and athletic meet. The program consisted of calisthenics, rooster fight, dashes, tug of war, running hop, step and jump and running broad jump, relay races, obstacle race, etc. The boys were handicapped according to their grades and were entitled to enter but two events outside of the calisthenics. Fourteen classes, from the third to eighth grade took part, being divided into senior, junior and midget classes. A prize in the form of a school banner was awarded to the room scoring the greatest number of points in either class. No individual prizes were given. In the grand total of points a sixth grade led with 18 points, and a seventh and an eighth were tied for second place with 17 points each. A fifth grade was third with 16 points, demonstrating the value of handicapping the boy according to his grade rather than as to his size, weight or age. The



calisthenics were won by a fifth grade, with an eighth grade second and a sixth grade third.

The second annual field day was held at the same place on the 14th of June, 1909, and proved to be a greater success than the one of the previous year. This year the school was divided into two parts or teams, Blue—and—White. These two teams were again divided into seniors (Boys over 14 and over 5 feet), juniors (Boys over twelve and under 14 and not 5 feet tall), and midgets (all boys under 12 years). Each side then selected a captain and a lieutenant, these officers to take charge of their side and see that practice was begun, teams were formed and entries made (All with the advice of each class teacher). Upon these two officers rested the winning or the losing of the contest. The following program and bulletin was posted in the school:

At 3 P. M. the boys will assemble, dressed in dark trousers and white shirtwaist and blue tie (Four-in-hand preferred), the White forming on Sellers Street facing East, and the Blue on Franklin Street facing North, eight abreast and smallest in front. With the Frankford Brass Band leading the two teams, Blue first and White following, will march to the ball park, where the teams will line up and take positions on the field. The Blue will form on the east, and the White on the west side. The ranks will then open sideward for the Mass Drill. This will be marked by the judges, the side receiving the highest number of points will win the event. The same exercises and music will be used as were selected for the Public School Field Day on Belmont Plateau, Fairmount Park, on May 29th, 1909. After the mass exercises the boys will march off the field and immediately prepare for the other events. There will be Dodge Ball, 25 to a team (seniors in a 45 ft. circle, juniors 35 ft. and midgets 30 ft.).

Tug of War, 15 on a team. Relay Race, 4 on a team. Running

Broad Jump, three boys from each side of each seniors, juniors and midgets..

Potato Race, midgets. Human Burden Race, juniors. Obstacle Race, seniors.

In the Mass Drill 560 boys participated, that is every pupil in the Marshall school. In the other events 282 boys participated, making a percentage of a little over 50 for this work. The Whites won with 78 points, against the Blues 71. The Mass Drill was won by the Blues.

The method of scoring used was: Mass Drill, 5 points to the winner; team events 5 points to winner and 3 to loser; individual events, 5, 3, 1 points. The obstacle race was very amusing and spectacular, as one of the obstacles used was an eight foot rail fence which each runner was compelled to scale.

The most interesting feature of this field day was the fact that no prize of any description was offered. The boys entered and fought with just as much spirit as if there were gold medals given. To win was their "aim" and "fun" was their motto. An elegant spirit prevailed at all times and great credit is reflected on Mr. Percival S. Woodin, "the boy's friend" and principal of the school. To him and to his faculty (two men and twelve women) the credit is due for the success of the Field Day. Over two thousand persons, friends and parents were present, as each boy was given two or more tickets of admission.

Preparations are now being made for the Third Annual Field Day and the only change being that there will be but two individual events (the rest being team events), these being obstacle and sprint races. Potato race will have 8 or more on a team. The Whites and Blues will again contest as during last year.

The expenses of the Field Day were born by the pupils and their teachers .The use of base ball park was secured throcgh the kindness of a former pupil. The judges and officials of the Field Day were the members of the Department of Physical Education and a number of graduates of the Marshall School. (In the next issue an inter-class contest in a Girls' Grammar School will be reported).

A HOME-MADE OUT-DOOR GYMNASIUM.

By HUBERT N. WATSON, Minneapolis, Minn.

There are large numbers of gymnasts, of various degrees of ability, as well as many other persons actively interested in their physical well-being, and regular attendants at gymnasiums in the winter, who dislike to drop the practice of gymnastics altogether in the summer, but are almost forced to do so because of the inconvenience of working indoors during the hot months. Most of these would like to work in the open air if they had the facilities, and it is the purpose of this article to furnish them with information and advice that will enable them to construct their own equipment.

The first essential in building an out-door gymnasium is a suitable location, which may be in the back yard or on a vacant lot not too difficult of access. The apparatus described in the following paragraphs are enclosed in an area about twenty-five by fifteen feet, and could have been compressed into a smaller space if necessary. The directions are practical, apparatus constructed according to these specifications having been in use for an entire season with no loss in utility, and each piece if made as directed will stand any strain that may be put upon it by the most expert performer.

THE HORSE

The horizontal bar is the most difficult to put together, as well as the most costly, and very often one can pick up an old bar, or the parts of it, more cheaply than it can be procured in any other way.

First look for your uprights, which may consist of two iron pipes about 1¾ inches in diameter, inside measurement, and seven feet four inches long. The bar itself may be of either wood or steel, but since we are considering both cost and utility, we will select a steel bar one and one-eight inches in diameter, which any machinist will turn out of a piece of cold-rolled steel for about three dollars. Six feet is a good length, and 1½ inches on each end should be squared, to fit into the shoulder or joint, which is the only part of the apparatus that is at all difficult to make.

THE PARALLEL AND HORIZONTAL BAR, SHOWING STRAW PIT AND COVER

This may be cast, but will be stronger if wrought by a blacksmith, and the cost will be about the same for two pieces. Figure (1) shows the end view, one-half size, and figure (2) shows the side view. The part (C), conical in shape, drops into the upright, which it exactly fits at the top, and rests on the shoulders (D). The square hole (B) receives the end of the bar, which should be taken to the blacksmith and welded in, although it would be possible to cut a thread on the end of the bar and hold it in place with a nut. The welding process is much simpler, however, and by far the more secure. The parts (C) and (D) are circular, but (E) is rectangular, 2¾ by 1½ inches, with the edges rounded to prevent injury in case the performer should happen to strike them in a vault or leg-circle. The arrows at (A) and (B) in figure (2) point to the openings (A) and (B). These dimensions need not be closely adhered to, but may be changed to suit the convenience.

The holes (A), (A), one-half inch in diameter, are for the guys, which may consist of quarter-inch wire rope, passed through the holes, the edges of which are rounded to prevent chafing, and spliced. A hook can be used, but the guy will have to be spliced into the hook, and it is hard to find a hook of ordinary size that will not bend or break. Splicing is not very difficult, and can be done well, if perhaps not very smoothly, by anyone with a bit of practice. Pass about six inches of the guy through the hole, separate the strands on the short end, take an awl and make an opening between two of the tightly woven strands on the long end, as close to the casting or hook as possible, force one of the loose strands through it, and pull it tight with a pair of pinchers, then do the same with the other strands. Continue in this way, weaving the separate strands through the rope, then wind with string or fine wire, and your guy will be as strong in the splice as anywhere else.

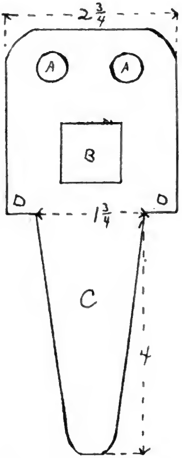


Fig. 1

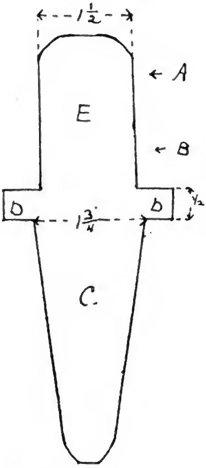


Fig. 2

The guys, including the hook at the lower end, should be each nine feet seven inches in length, although a few inches more or less do not matter, as the final adjustment takes place when the bar is set up. Two guys, preferably those at opposite corners, must have turn-buckles, and for the others ordinary hooks, or twin hooks, may be used. Take no chances with light material, but have these hooks as strong as you can get them. The guys must of course be spliced into them also. Your bar is now complete, and ready to be set up.

Procure a post-hole digger, the boring kind if you can get it, and dig three holes six inches wide and four feet deep, one at each of the three corners of an area eleven and one-half feet square. Here let us register the hope that you will not be forced, as we have been upon occasions, to bore through a bed of ashes, or the neglected foundation of a house. Drop into each of the holes you have made a large stick of cordwood.

You may put long half-inch screw-eyes into these posts to fasten your guys to, but having had a thrice repeated experience of a screw-eye pulling out while we were doing "giant circles," we use them no more, and if you are going to do any advanced work, or use the apparatus for more than one season, we suggest the following plan. Call your friends into service, and raise the bar into position, dropping the shoulders into the uprights, and setting the latter on two blocks of wood sunk into the ground. See that it is in the proper place by stretching three of the guys to their respective posts, then from the near edge of one of the posts bore a ⅝ inch hole diagonally downward, in line with the guy-wire, and force through it a ⅝ inch eye-bolt, which will need to be about a foot long. Place a large washer between the nut and the wood, cutting a notch in the post at right angles to the bolt, and tighten the nut. With this contrivance you can feel assured of absolute safety.

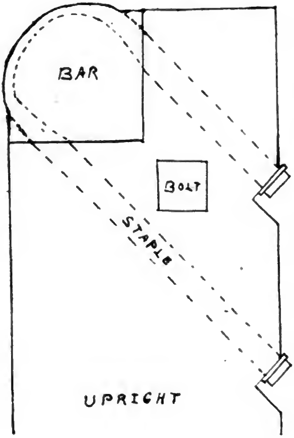
Put in the other bolts, hook the guys on, and then dig the hole for the fourth post. The measurements given above are exact, but to allow for variations in construction and irregularities in the ground it is best to leave one post until the bar can be fastened to the others, and then place it where needed.

When you have tamped the earth in around the posts the bar is ready for use, and it only remains to provide for a soft landing-place when you alight (or fall off). If your apparatus is set on the lawn, perhaps all that you will need, or be permitted to have, is a good mat, which you can make yourself out of ten-ounce white duck and cotton-batting, tied with string; but if you wish to try flyaways and difficult dismounts, and have a suitable place, we suggest that you dig a hole in front of the bar, five feet wide, fifteen feet long, and one foot deep, line the sides with boards, and scatter therein about three bales of straw. We have tried everything as a filling, hay, straw, excelsior, sawdust and tan-bark, and have found that straw is the cheapest, softest, and keeps in good condition the longest of any of these materials.

We use as a cover seven twelve-inch boards sixteen feet long, three cleated together for one side of the roof, and four for the other side. Cover the cracks with tar felt, adjust the cleats so that the roof will be self-supporting, and you have a protection from the weather that two persons can easily put together or throw aside. Shape the bottom of the pit so as to drain the water that will get in through the sides and ends, turn the straw over after a heavy rain, and your landing place will remain in good condition all summer.

For the parallels you will need four pieces of four-by-four eight feet long and two bars, eight feet long and two inches in diameter, which a wood-turner will make from a good piece of straight grained white oak for probably $2.75. Have him leave them square for a space of four inches at the distance of a foot from each end. With a six inch auger bore holes in the ground at the four corners of a rectangle five feet eight inches by twenty-one and a half inches, to the depth of three feet. Drop in the uprights and cut a piece two inches square out of the top of each one, on the inside edge, for the bars to rest on. Now lay the bars in place, being sure that they are level, and that the squared part exactly fits the niche in the upright; then dig a trench around the two posts at each end, as deep as you can, adjust them so that the bars are exactly seventeen and a half inches apart, inside measurement, and secure them in place with two-inch planks, extending from one to the other, and nailed on with heavy spikes. Fill in the dirt and tamp it down firmly.

To hold the bars in place use three-eight inch staples, hammered to a thin strip at the head, and threaded on the ends, which a blocksmith will make for ten cents each. Bore holes diagonally downward and outward from the top of the post, about 15-8 inches apart, and having fitted the staple around the bar in a shallow groove provided for it, force it through the holes and secure it in place with a washer and nut. Shave down all edges and corners, cover the bolts, if they protrude, with canvas or leather, put a machine bolt through the upright at right angles to the staple to prevent splitting, and the apparatus is complete. To protect it from the weather you may cover each bar with two boards nailed together to form an inverted trough.



For the horse secure four two-inch planks, six feet long by one foot wide, and two pieces of four-by-four seven feet long. Through three of these planks cut holes four inches square, with the outer edge one foot from the end of the board, so that the four-by-fours will fit into them. Nail these together, then nail the fourth board on top. Dig two holes three feet deep, forty-four inches from center to center, drop in the uprights, and place the body on them. This will probably fit rather snugly, and it will not be necessary to nail it. Round off the top of the horse, drawing an arc on the end to mark your course, and it is ready for the pommels.

For a dollar a blacksmith will bend two iron rods, an inch and a quarter in diameter, or larger if you like, into half-circles, with the tops slightly flattened, and the ends extended six inches. These extensions are parallel, and 8¾ inches apart. Bore holes in the horse to receive the pommels, placing the latter 17½ inches apart, and hammer them down until the tops are not less than three and one-half, nor more than four and a half, inches from the horse when padded. For padding cotton batting will serve very well, and the whole may be covered with heavy duck. A coating of shellac will help to keep the pommels from rusting, and a piece of rubber cloth should be thrown over the apparatus when not in use. We have not used anything except a mat under our horse and parallels so far, but next summer we intend to fill in around them with saw-dust.

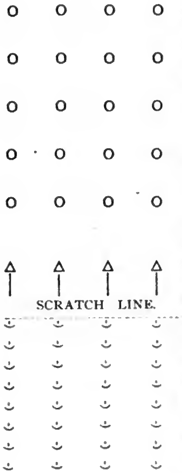
With apparatus such as described, a capacity for hard work, and plenty of perseverance, one can add considerably to his gymnastic ability in a summer's practice.

PLAY AND PLAYGROUNDS.

POTATO RACES IN TEAMS.

Philip G. Lewis, Philadelphia.

The Potato Race usually is conducted as an event for single competitors. With very little trouble it can be arranged to accomodate considerably more persons, thereby making it possible for an entire class to run in a short time. Wooden blocks can be used instead of potatoes, and a circle drawn in chalk on the floor can take the place of baskets or other recepticles. In this case the only articles necessary to conduct the event are about two dozen blocks. In case these cannot be had, handerchiefs, pieces of coal, etc. can be used.



RELAY POTATO RACE.—Eight (or any number) on a team; the first runner plants or places the potatoes and the next one picks or gathers them. The potatoes (four to six) are placed on marks from four to ten feet apart, the first one being at least ten feet from the basket in which the potatoes are to be placed. About fifteen feet behind the place where the potatoes are to be placed a line is drawn. It is from this line that all the runners start and finish. After having had their run they stand in the rear of their line. The first runner races to the basket and (taking one at a time) runs and places the potatoes on their marks. The first potato must be on its place before a second one can be gotten and placed. This is done until all the potatoes are planted. The first one then runs back and tags the next runner, who must not cross the starting line until he is tagged. He runs and picks up the potatoes in exactly the same manner, placing them in a basket on the scratch line. The first potato must be in the basket before the next can be gotten. When this runner has them all picked, he touches the next one on his team, and so on until every one on the team has had a turn (either to plant or pick). In this way any number can be on a team. A variation is to have either cigar boxes or small tin buckets to put the potatoes in, making each runner carry the box or pail with him to the next runner. Another variation is to have a handkerchief, which must be tied around the neck of the runner before the first potato is touched and this must be handed to the next runner to be tied around his neck before he is allowed to run.

BOOK REVIEW.

—GYMNASTIC KINESIOLOGY. A manual of the Mechanism of Gymnastic Movements by Wm. Skarstrom, M. D., Teachers' College, Columbia University, New York.

This book is a compilation of a series of articles which appeared in the Physical Education Review during 1908 and 1909. The author's aim is "to establish a basis for estimating the value or effectiveness of different styles of gymnastic work as regards posture and motor education." An analysis of the mechanism of representative types of exercises and their effect on the body is made.

The book is well written and is a valuable contribution to our literature in the English language on gymnastics. It contains 42 illustrations, some of which illustrate the muscles of the body and others correct and incorrect gymnastic positions. It will, no doubt, be of value to students and teachers of gymnastics.

The F. A. Bassette Co. of Springfield, Mass., are the publishers. The price is $1.25 with an addition of 10 cents for postage. It may be secured from "Mind and Body," Herold Bldg., Milwaukee, Wis.

—THE MECHANISM OF BODILY EXERCISE. An outline course of study, designed for students of physical education, is the title of a booklet written by Wilbur P. Bowen, M. S., of Michigan State College, 1909.

It is a condensed anatomy of the chief voluntary muscles of the body and a very good little book for students and teachers of physical education who wish for a concise description of the muscles, their origin, insertion and function. It saves one the study of elaborate text books on anatomy. It may also be used as a good quiz-compend.

The last three sections of the book deal with abnormal postures and deformities such as are caused principally by weakness of muscles and faulty posture.

It contains 72 pages with plates illustrating the chief bones of the body. Additional loose illustrations accompany the booklet for the use of students in class-rooms.

The author is his own publisher.—Dr. K.

—DAS SPIELEN DER KINDER IM SANDE by Hans Dragehjelm is an interesting pamphlet. It is written, as its title announces, in the interest and promotion of the play of the child in sand and indicates the various possibilities of this form of play. "Sand is the greatest of pedagogues," is an old adage used by the author. (Dr. Schmidt of Bonn wrote the introduction, warmly recommending the author's efforts in the interest of child-life.)

It is a book which everyone in Kindergarten or playground work should read. The book is a translation from the Danish to German by Alfred Dietrich, and is published by K. F. Kohler, Leipzig.

To be had from "Mind and Body," Herold Bldg., Milwaukee, Wis. (Dr. K.)

—"PLAYGROUND TECHNIQUE AND PLAYCRAFT" by Arthur Leland and Lorna Higbee Leland; 6x9 inches, 284 pages; price $2.50 and 16 cents postage. Published by the F. A. Bassette Company, Springfield, Mass.

Part I. treats of the Philosophy of Play and its Application.
Part II. of Playground Architecture and Landscape Gardening.
Part III. of Playground Construction.
Part IV. of the Philosophy of Constructive Play.
Part V. of the Technique of Constructive Play.
Part VI. of the Educational Method of Building Playgrounds.

While much has been written on the value of play and on the needs of play, very little has been said of how to go about and do things after you have been convinced of the necessity of play. This telling you what to do and how to do it, the authors have succeeded in putting into the most serviceable shape. Nowhere must a dollar go farther than in playground work. And the authors, by means of drawings and specifications, show how those who are willing to do some work themselves can make a dollar go as far as two. The book is heartily recommended.

To be had from "Mind and Body," Herold Bldg., Milwaukee, Wis.

—"MUSICAL KINDERGARTEN METHOD" by Daniel Batchellor and Charles W. Landon; 160 pages 8x11 inches; cloth cover; price $1.50 net. Published by Theodore Presser Co., Philadelphia. To be had from "Mind and Body," Herold Bldg., Milwaukee, Wis.

The new manual for teachers on the "Musical Kindergarden Method" opens up an avenue of thought that up to this time has been allowed to go unexplored.

The writer is well known, not only as a man who has devoted much time to the study of music, but also as one who has carefully investigated the needs and natural impulses of the child student.

"It must be remembered," he urges, „that the child's musical education is going on, for better or for worse, throughout his nursery period. This is the time when the soul of the artist is quickened, and if the thing is not done now it can never be as well done at a later period." For this reason every mother should acquaint herself with the importance of the rhythmic sense in children, as well as how to develop it. When the little one is old enough to receive conscious impressions along this line, no better medium of expression is needed than the old, yet ever new, Mother Goose melodies. She it is who shares his most vital interests and experiences, during the various stages of his growth.

Professor Batchellor has combined color and tone in a manner quite unique, and he has also worked out his own tonic sol-fah system, indicating the possibilities of the movable doh. Moreover, the book has, by way of illustration in the way of melody and harmony suitable for children, fifty note songs with appropriate words. It is in every way a desirable collection for parents and educators, as it contains the basic principles of musical education, developed from the Kindergarden standpoint.—*Edith M. Casselberry.*

MIND AND BODY

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METHODS APPLIED TO THE PHYSICAL TRAINING OF THE DEAF AND THE BLIND CHILDREN IN THE PUBLIC SCHOOLS OF MILWAUKEE.*

By GEORGE WITTICH, Director Physical Training, Public Schools, Milwaukee.

Abnormal children, no matter of what type, need physical training as much, if not even more than normal children; for the physical life of the former, when they are left to themselves, is usually very limited. It commonly lacks in all the health-giving and health-maintaining physical activities. In the most congested districts of large cities the normal children will find room, at least, for some running, skipping and jumping, were it only on sidewalks, or from these through the corridors of the tenement houses to the small back yards, or in some alley.

But the abnormal child cannot take part in even these limited exercises and plays, owing in part to the physical and psychical defects (timidity and irresolution), and in part to the repulses of the other children. This results in a general physical backwardness and weakness.

The physical defects which the deaf and blind especially share in common may be enumerated under two heads:

1. Insufficiency of respiration and circulation;
2. Absence of the normal healthy muscular tone and the defects resulting therefrom.

Hand in hand with the physical life of the abnormal child goes its psychical. To my knowledge, the literature on this subject of the psychical life of abnormal persons is very meagre because of the fact, that scientific inquiry into the psychic life of abnormal persons was, if ever, very rarely undertaken, and, except in the last few decades, was taken up in reference to some few of the most gifted and educated adults of this type.

Consequently we are forced to rely entirely upon the observations of those persons, mostly teachers, who are constantly in close touch with these unfortunates. With the aid of these observations and with the logical conclusions formed therefrom, we are enabled to select and adapt the proper forms of exercises and games for awakening and further developing the most important psychical qualities in abnormal children to approximately that degree which is found in the normal class.

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* Read at the meeting of the Public School Section of the Am. Physical Education Association, Indianapolis, Ind., March 2d to 4th, 1910.

Our general aims in the physical education of these children are:

1. Stimulation of health, growth and vigor;
2. Creation of an alert and cheerful mental disposition;
3. Development of the greatest possible degree of accuracy of the movements of the body;
4. Correction of physical deformities.

THE PHYSICAL TRAINING OF THE BLIND.

To grope along in darkness day by day cannot fail to develop habits which in the course of time will simultaneously menace the health and symmetry of the body. Typical acquired physical defects of the blind are:

1. An uncertain and hesitating step;
2. Round shoulders;
3. A forward pitch of the head;
4. Not rarely a torsion of the cervical portion of the spine, seemingly from anxious listening;
5. Insufficient oxydation and circulation of the blood;
6. Inadequate respiration;
7. A general physical weakness.

Over-anxious and over-indulgent parents are much to blame for the deplorable physical condition of these blind children, because they deprive them of most opportunities for developing self-reliance and independence of action prior to the admission into school. The home-training of such children usually does very little towards making life happy and joyful. In most instances the poor victims of pitying and pampering suffer grievously at the hands of their improvident parents and it rests, therefore, with the school to introduce means that will bring light into the darkness of the minds of such children, and will enable them to enjoy at least some of those things that make the normal child happy and contented. Nothing will accomplish all this better and more perfectly than music, instrumental and vocal, and carefully selected and applied games and gymnastics.

The beneficial effect of music I notice every time when I visit that class of our blind children that is so fortunate as to possess a piano. The unmistakable expression of satisfaction and happiness on the faces of the listeners is too convincing evidence that music appeals to them very strongly. Music, instrumental and vocal, is an established branch of study in our schools for the blind.

The purport of motion-games in the education of the blind is to create joy and happiness, especially that kind of happiness which is concomitant with accelerated circulation and respiration, which flushes the cheeks, produces perspiration and causes the muscles to grow firm, and develops a certain degree of resoluteness and self-confidence.

For formal gymnastics is reserved the office of correcting the hesitating and awkward step, the round shoulders and the twisted and bent spine; of enabling the pupils to acquire a large stock of useful movements of the body, and of executing these movements accurately and with definiteness of purpose, so that ***even the blind child may become a useful citizen in the course of time.***

We have three classes of blind children located in different parts of the city. Each class consists of 10 to 12 pupils. The German day's order is the basis of the physical training. Wherever possible two rooms ought to be reserved for gymnastics; one with apparatus, the other without. This arrangement permits the teaching of running, marching, and dancing steps and games in one, and that of exercise on apparatus and the jumping in the other. We have the good fortune to enjoy these facilities in two of our schools. It is furthermore, of importance to provide an iron pipe of about one inch in diameter, fastened horizontally to the walls of the play-room and about six inches away from them, at the height of the hip of an average child, for a railing during running, marching and dancing steps.

The rooms we use as gymnasia are equipped with parallel bars, fling rings, climbing poles, standards for jumping, beat-boards, mats and some play apparatus. All German apparatus can be used to good advantage in the physical training of the blind. Our schools for the blind are still in an experimental state and for that reason the rooms and equipments are still inadequate.

The method of instruction employed in the gymnastics for blind consists mainly of practical demonstrations by the teacher which the pupils observe by the touch of their hands, and partly also by the teacher leading and placing the pupils' bodies, or different parts thereof, into the desired positions. At the same time the correct gymnastic terms and commands are given and explained. Then the pupils are requested to practice the movement at will, while the teacher is making corrections of positions of the pupils. After these have acquired skill and accuracy in the execution of the exercises, the latter are timed on command and later repeated rhythmically. As soon as possible, the pupils are required to repeat known exercises promptly and with utmost precision on command. It is only the new forms that are presented in the manner above described. Thus movement after movement and exercise after exercise become the possession of the pupils so that in the course of time a considerable stock is at their disposal.

By means of the sense of touch with hands and feet the blind develop the ability of recognizing forms and judging distances, height and depth as they occur in the gymnasium. Persons blind from infancy can acquire thus an infinite store of mental pictures by their intensely acute sense of touch.

THE DAY'S ORDER.

In the *introductory run* and in some of the more vigorous dancing steps, which are always used as *First Unit,* we apply both, formal tactics and such forms as the child daily hears of, and which quickly convey ideas, such as drawing a carriage, a fire engine, a hook and ladder truck, etc. In the latter forms the children grasp a long pole or rope, with either the teacher or one of the children as driver. In the windings of the flank rank the teacher either leads the leader of the class by the hand, by a string, or by a long stick. The members of the class are connected by the grasping of hands or dresses, or by taking hold of a rope. If a hand-rail is at the disposal of the teacher, it should be resorted to from the first.

Tactics of ranks of two, three and four, such as wheeling with the members connected by holding a short wand horizontally in front, grasping of hands, front chain-lock, as well as marching forward, backward and sideward will suffice as *Intermediate* Exercises after the introductory unit. Aesthetic forms, such as: encircling, small and large chain belong to the above named forms.

Standing and simple leg exercises in standing, and walking, ordinary and on toes, with objects carried on the heads, such as bean-bags, small pieces of wood, etc., improve the posture and carriage of head and trunk very much.

Changing leaders often for marching and running is a standing rule.

Free Exercises, calisthenics, compose the *Second Unit* and are executed on place only. The progression with regard to the development of skill, control, corrective and hygienic effects is adapted to the needs and the ability of the pupils. It is naturally much slower than with normal children. Common and typical faults, such as: drooping shoulders, forward pitch of the head, timid and incorrect stepping, broad wobbling walking, etc., are being remedied during class-work. Deformities are treated separately and individually before or after class-time. Large arm-movements, including raising, swinging, bending and extending; trunk, shoulder and neck exercises, leg exercises, such as: raising and swinging, bending and straightening, toe-standing, foot placing, striding, lunging and kneeling, at first in simple form, and later suitably combined, are the forms that are used most frequently. Marching and dancing steps are practiced frequently to musical accompaniment, mainly for developing the sense of rhythm, which is little better than rudimentary with blind children.

Jumping. No other form of exercise is comparable with jumping as a means for developing physical control and self-confidence in the blind. Passing through space, without contact with anything, be the time ever so short, is extremely terrifying to the blind. For this reason a carefully laid-out method of instruction in jumping is to be adopted for the purpose of overcoming that fear existing among this class of children.

The three forms of *free jumping,* which we employ at present, are the broad, high and deep jumps, from the stand, with walking and running start. Since the blind, when left to themselves, do not indulge in exercises of this kind, it takes some time before they learn to use the foot, knee and hip joints properly, and before they develop enough determination and courage to jump with a will. The guiding hand and the encouraging remarks of the teacher are very often necessary to cause these pupils to overcome their timidity.

Knee-bending in alternation with toe-standing, hopping and jumping on place, with hands partly supporting the body-weight by resting on desks, chairs, etc., or by grasping the parallel bars, rings or poles, are the most essential preparatory exercises to be used. For the next steps in the progression the same forms are taken in free exercises without support. These are followed by jumping from place, intermingled with other free exercises.

In the actual jumping the *broad jump* from the stand with locked heels is taken up first. It is followed by the *forward straddle jump* from the stand; then the straddle jump with walking and running start are taken up as the last steps in the progression of the broad jump. For these forms we apply the ordinary apparatus; but the beat-board is not more than two (2) inches high; very often we use only the corrugated rubber runner.

We cause the pupils to ascertain the distance, height or depth before each jump by the touch with the hand or foot, and the length of the start by counting the steps.

The high and deep jumps are developed in a similar manner. The latter is as yet executed from steps and chairs and without start. The degree of accuracy which the pupils acquire in judging the distance over which they are to jump, the place of take-off and the length of the start is often truly wonderful.

As the apparatus has been installed but recently, we have not yet passed beyond the elementary forms of exercises on these apparatus.

The most essential type among them is the *jumping into momentary* hang with bent arms, with various grips and various distances between the hands. It is an exercise of quickness, for it is executed rythmically and in a quick or moderately quick measure of time. When taken with hands apart farther than the shoulders it is also an excellent exercise for deepening and broadening the chest, due to the action of the rhomdoidii and the lattisimi dorsi. Much attention is also given to the *hang-standing rearways,* with hands higher than the head on the various apparatus, on account of its corrective value.

GAMES. The physical training period of the normal child must be a period of delight and joy, and the last unit of this period, *the game,* must be the climax of this pleasant part of the curriculum. The same must be said in reference to the physical training of the *abnormal child.* For obvious reasons the number of suitable games in the instruction of the blind is small. The following are the most applicable.

BALL GAMES. The large, hollow, soft rubber ball, the so-called six-inch gas-ball, is the most practical at first, mainly because the blind child can catch it by using *arms and hands.* Later, when the movements of the hands have gained in exactitude, the use of the two or three-inch balls may be added.

The *simplest form* of using the ball consists in throwing it upward with both hands, and catching it again with arms and hands.

Bouncing it on the floor, followed by catching it in the manner described above, we consider the second step of the progression in the use of the ball.

Next comes *throwing the ball against the wall,* permitting it to bounce on the floor, and then catching it. For their own satisfaction the pupils very soon throw and bounce the ball higher and farther, and thereby, evidently without intention, develop their physical skill as well as their judgment of distance, direction and sound.

A game similar to the game of "ten pins," with Indian clubs as pins and the rubber ball as bowling ball, is played occasionally and affords the pupils much pleasure. The place of the clubs is indicated by the teacher by tapping with a wand or some other sound.

CIRCLE GAMES. The most important of these games are: "Blind Man's Buff" and "Grunt." In both games the arms of the active players must be extended forward.

RACING. For racing exercises we use the following apparatus:

1. Two jumping standards, one placed at the start and one at the finish, each held firmly on the floor by a weight;

2. A rope of the thickness of a sash-cord, fastened taut to the posts a little higher than the hips.

During the run the pupil slides one hand along the rope. To enable the runner to be on guard when he is nearing the finish, a couple of mattresses are placed on the track near the two posts. Beat-boards are inclined against the near ends of the mattresses to prevent stumbling and falling of the runner. As a rule we practice the up-and-down-race, whereby the runners either pass around the post and back on the other side, or return on the same side without delay.

All the various forms of running and hopping races, as well as the so-called "Potato Race," and preferably those with dumbbells, bean-bags, or blocks of wood, can be executed with the aid of this simple device without the least danger to the pupils. The announcement of the results of the heats is, of course, of great importance as an incentive to further exertions.

ANTAGONISTIC GAMES. This is the most important form of strength exercise on the whole programme. It is a strength-giving exercise quite unlike that on the apparatus because of the resistance offered by the watchful opponent, who will shape and adjust his resistance, attacks and parries according to the offered aggressive movements. Besides giving strength, this exercise is also an excellent means for enhancing the pupil's skill in the preservation of his physical equilibrium (sure-footedness.)

In view of this advantage antagonistic games are given in nearly every lesson. The most essential forms are:

1. Tug of war, with a rope or a long wand;
2. Pulling and pushing, with one or two short wands;
3. Hand-pulling and pushing, with one hand or both, in standing on both feet or hopping on one foot.

This is, in brief, a synopsis of the gymnastic material which we make use of at present, and the method which we employ in the physical training of the blind.

THE PHYSICAL TRAINING OF THE DEAF.

The hearing child brings into the school quite a lot of experiences and a certain amount of knowledge which he has acquired through his understanding and use of language; but the deaf child has passed through altogether different experiences. Before entering school the deaf child has no articulated language and possesses only very primitive signs by means of which he communicates his wishes to his family and friends. The deaf child, nevertheless, may reason quite as well as the hearing child, because he may be intellectually normal. The physical condition of the average deaf child is somewhat better than that of the average blind child, but it is similar, and its general outline has been mentioned above under the heading of physical training of the blind. He masters only a limited number of physical activities, namely those which he acquired by way of imitation at play, and still fewer games, owing to the lack of free verbal exchange of ideas. The majority of the deaf pupils have a shuffling walk, and they lack poise and equilibrium.

Some authorities claim that these latter defects originate from the absence or insufficiency of the liquid in the labyrinth of the ear. Others again name as cause a defect in the semi-circular canals and the vestibular ends of the eighth cranial pair of nerves. In extreme cases the whole bearing of these children, especially the awkwardness of their legs, resembles very much the behavior of patients suffering of certain pathological conditions of the lumbar nerves. Properly instituted physical training will improve to a considerable degree the retarded co-ordination of the muscles of the legs in these afflicted children, which statement has been verified by numerous experiences made in our own school.

The method, which we employ in the gymnastics of the deaf is very similar to that which we use in teaching the hearing. Attention is obtained by the tapping with the foot or a wand. Each new exercise is shown as usual, and then its name is given by distinnctly articulating the word in whisper or audible speech; the latter being perceived by the pupils from the motions of the lips (lip-reading.) Known exercises are demanded on command, and one of the earliest duties of the teacher is to cause the pupils to memorize commands and the names of movements and exercises, so that in the course of time practical demonstrations need be resorted to less frequently. Every-day actions and suggestions are of great utility in the instruction of the deaf, when applied as hearing people apply them, e g., as accompaniments of terms, to indicate the cadence of movements, to emphasize and re-enforce the meaning of commands and terms.

We proceed in the development and progression of teaching all types of children, the normal as well as the abnormal, according to the old pedagogical rule: *From the known to the related unknown.*

In correcting physical defects of the deaf we naturally deviate somewhat from the normal apportionment of exercises of the various units of the days order; but the latter remains unchanged. We pay particular attention to those forms of exercises that tend to correct faulty posture of head and shoulders. Much stress is also laid upon a correct, vigorous and firm marching step, accompanied by an erect carriage of head and an active chest. Some of the other principal leg exercises, both the strengthening and the more graceful forms, such as the dancing steps, for instance, occur in every lesson in a prominent manner.

In tactics only the simplest exercises of the rank and of the body of ranks are being practiced, to enable the pupils to pay the necessary attention to the step and the carriage of the body.

Running, with or without leg exercises, and high, broad, deep and combined jumping are considered indispensible parts of every lesson. Vaulting over back, horse and parallel bars is also a regular part of the programme and occurs at regular intervals. Particular attention is given to good form in jumping and vaulting. Upon alighting in jumping and vaulting deep bending of the knees, and erect posture of head and trunk, and an arched chest are always demanded and usually acquired in the course of time. Causing the pupils frequently to remain in squat-stand a few moments during free exercises and jumping and vaulting exerts an excellent corrective influence on them.

Because of the fact that the deaf-mute does not use his organs of speech, the development of the respiratory organs is imperfect, and the death-rate of this class between the ages of 20 and 30 is higher than that of normal persons, and also of those deaf who have learned to practice oral speech. For this reason most of the exercises which we employ are such as will improve circulation, respiration and chest and lung capacity, namely the rhythmical exercises of quickness. Rhythmical free exercises and dancing steps are often accompanied with music on the piano, which seems to be conveyed to the children by the vibration of the air caused by these musical sounds.

Abnormal children are usually somewhat willful and whimsical. The common causes of this are the wrong methods applied in the home training. This acquired trait of character becomes very often manifest in deaf children when formal exercises, that should be executed with utmost exactness and precision, are presented in too formal and unsympathetic a manner and without the necessary diversions.

The physical director of abnormal children must therefore be a more astute observer and a more ingenious, tactful and patient teacher than the instructor of normal pupils.

Our school for the deaf is attended by 83 pupils, 50 girls and 33 boys, who for physical training are divided into 5 classes.

Physical training was introduced into the Milwaukee School for the Deaf in 1903 and has since formed an important part of the curriculum of this school. It is carried on daily, partly in the gymnasium, partly in the yard. The games are played in the yard whenever the weather permits.

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—Dangers of ventilation are reported from Paris according to the "Deutsche Turnzeitung." Two physicians having state appointments recently made interesting experiments concerning the effects of electric ventilators resulting in surprising observations. The experiments were begun in five different cafes and restaurants at 9:30 a. m., after the electric ventilators had ceased operating for eight hours. 10,000 bacteria were found in each cubic meter of air. After the lapse of one hour while the electric ventilators were in operation the number of bacteria had increased to 35,000 per cubic meter. In another cafe 12,000 bacteria were detected in each cubic meter of air before the ventilators were set to work but 39,000 were found after the electric ventilators had been put into operation. The results obtained were similar in the other restaurants. This fact, according to which the air-cleansers do not only not serve their purpose but mean a severe hygienic danger, has naturally created a sensation. The two physicians making the experiments look upon the electric ventilators as dangerous means of spreading contagious diseases and especially tuberculosis.

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— One hundred and seventy-seven cities of the United States of over 5000 inhabitants are maintaining playgrounds at an annual cost of more than $12,000,000 of which over one-third is raised by voluntary contributions.

BACK-STRAIN AND EYE-STRAIN.*

By George M. Gould, M. D., Ithaca, N. Y.

It is the prevailing habit, bred by routine and inobservance, to think only of the more striking and coarse diseases—accidents, those caused by infections, those that bring sudden death—as the chief causes of our cripplings and misfortunes. These the medical profession must study first, but we now recognize that the great mass of physical infirmities are not "organic," but "functional"; that is, they are morbid habits.

Headaches, indigestions, rheumatisms, nervous troubles, sleeplessness, incapacities for work, mental twists and inabilities, and diseases of the will and memory—these things beget more tragedies than all the smallpoxes, all the tuberculoses, all the surgical diseases, combined. And these functional and habit diseases finally wear down vitality and resisting power, and are the genuine preparers of the soil for the organic diseases. Organic pathology has given an enormous amount of attention to the seed of disease, but quite as much has it neglected the equally important soil in which the seed falls. The "terminal diseases," those which kill, are often —may I say generally?—the mere executioner of the long precedent functional diseases. Why blame the hangman?

Unrecognized, not fought against, nay, the truth about them hated and opposed, there are two sources of human disease and misery which, to my mind, far outweigh many of the others. These are lateral curvature of the spinal column and eye-strain.

The great majority of our young people from sixteen to twenty years of age are, I believe, afflicted with lateral curvature of the spine. I have been able to demonstrate that over eighty per cent of the freshman class in a great university have this deformity. (The official physical examinations of 520 freshmen at Cornell University show that 83½ per cent have lateral spinal curvature.) And such a source of suffering! A variation from an upright support, a curve, or kink at the base of the single column which supports the human body! What architect would be reckless of such a fact in the steel beams of his bridges or skyscrapers? And yet how few of the several hundred thousand physicians and surgeons in this country have awakened to the truths concerning its causal relations to much suffering, and to its easy curability. They go on treating its symptoms and effects with drugs, operations, institution life and "rest cures."

I believe there are 50,000,000 of American citizens, probably more, who have lateral spinal curvature, and who ascribe the suffering it causes to other conditions. Its cause is known, it never gets well of itself when untreated, and the slight curves are often the worst. It produces a hundred symptoms; is an enormously powerful agent in weakening and abnormalizing, in producing suffering, and yet it can be prevented, absolutely, in ninety-nine cases out of one hundred.

Dressmakers and tailors know much about the prevalence of spinal curvature; even the shoemakers and cobblers, by genuinely scientific observation of worn-out shoes, often guess the truth. An hour's study of passersby in the street will show one interested that despite their clothing a large percentage of ordinary folk are humpbacked, head-tilting, lop-sided,pigeon-toed, unequal-stepping, deformed in numberless ways. In the great majority of cases these defects are caused by spinal curvature. Artists have not discovered scoliosis because they have intuitively refused the scoliotic model, choosing straight-backed foreigners who never went to school. Not two school teachers dream that they are permitting and witnessing, even assisting, the creation of the millions of scoliotics of the optical instruments called the eyeballs. Perfectly shaped eyeballs, not more than 1-200 of an inch out, seem to be a physiological miracle impossible to nature. They do not exist in man, and in direct proportion to their imperfections, crippling perfect function, there is sequent disease and lessened efficiency of the person and of his life. In an amazingly large number inefficiency is present, and in all it occurs at some time in life more or less. In 1906 the official report of the medical inspectors of the Board of Health showed that of 78,401 pupils examined in the New York schools, 17,928 had defective eyesight. One must remember that the crude methods of making such examinations would not include the worst sufferers from eye-strain.

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*Reprinted from The Survey, Dec. 25, 1909.

Ametropia is the technical name for such imperfection of the eyeballs, and eye-strain is the name given to resultant morbid functions. In addition to this the eyes, before civilization, were evolved for a definite and necessary function—distant vision. In a few generations or centuries civilization has suddenly come demanding near-vision at one or two feet, and for this continuous "near work" upon tiny things, such as sewing and the printed page, the ocular mechanism is almost inadequate. The power of accommodation is unequal to the demand put upon it, and at forty-five it begins to fail altogether. The result is a need for that most useful invention of civilization, optical lenses, but lenses properly fitted and properly worn. The trouble is not that there are too few oculists, but that the great majority of these are interested only in the eye as an optical instrument and disregard any relationship between the eye and the rest of the body. And the oculists who can help their patients are not well supported by the opticians and the patient often does not obey directions.

Very many of the functional nervous and physical diseases now said to be of mysterious origin, are directly or secondarily due to back-strain and eye-strain, either singly, or, more usually, combined. The combination is certainly present in, and may be the cause of many cases of neurasthenia, hysteria, and "nervous breakdown." Thousands are afflicted with swooning or fainting attacks from the same causes. Meniere's disease is often little or nothing more than sick headache, caused by eye-strain, and preventable by correction of ametropia. Very many abdominal and pelvic disorders both of men and women are due to spinal curvature—the floating kidneys, gastroptoses, appendicites, ovarian and uterine diseases—because the malpositions of the body strain or weaken the ligaments of the viscera, crowding certain organs and making morbid their functions. Neurasthenia is often due to eye-strain and spinal curvature. Relief of eye-strain cures a host of the disorders of indigestion. Headaches of all kinds, sick headaches, migraine, hemicrania, megrim, "rush of blood to the head," the commonest and most health wrecking of all diseases, are almost always due to eye-strain.

Mental diseases, also, are frequently due to this cause, sometimes complicated by back-strain. There are few severe eye-strain sufferers who do not show the clear beginnings of mental deterioration in loss of memory and attention, lack of intellectual control or concentration, resolutions to commit suicide, attempts at it, monomania and other abnormal conditions.

Premature senility even and many of the social evils that come from a long-drawn-out old age are a product of bad ocular function largely derived from the ante-spectacle ages. Cataract, and indeed most of the inflammatory and surgical diseases of the eye after infancy, may be avoided by correct spectacles. In old people one eye often goes out of use and the other is weakened in acuteness, because lifelong astigmatism has not been attended to. Not one person in a hundred is properly glassed for the crippling defect of presbyopia, which comes to everyone at the age of forty-five. The menopause in women is inaccurately charged with a host of ills which are really due to presbyopia.

To this long list must be added the influence of these two morbid agencies in "preparing the soil" for the infectious, organic, surgical, and lethal or terminal diseases. Reports of the causes of death concern themselves with the diseases immediately preceding death. But he who wishes to prevent premature and unnecessary death, he who hunts for prevention of disease, will seek to know the precedents and origins of the terminal or death-dealing diseases. This search of the beginning of death must not be postponed to the *post mortem table.* The beginnings were away back in the years of morbid function. It costs life-force and health to hold a kinked spine in service, and astigmatism cannot permanently be cured, it must be corrected.

It would a hundred times over repay every college and university to retain an expert refractionist and straightener of spinal columns, because they would vastly increase the working power of the students and prevent waste of health and life and even wreckage of both. The medical supervision of the public schools, if properly done, would consist, nine-tenths of it, in attention to curved backs and ametropic eyes. Millions of dollars are spent for institutionalizing the failures, the invalids, the wrecks of many kinds, who could have been happy, successful, and useful if they had had at school slanted desk leaves opposite the right shoulder, and throughout their lives proper spectacles before their eyes.

The first step to be taken is to emphasize to the people themselves the seriousness of eye-strain and back-strain. If they realize the problem and its importance to them and their children they will see that correct glasses are obtained and are properly worn. They will also learn the simple exercises to straighten a functionally curved back, which require no apparatus, no expense, and very little time.

—A school of sanitary science and public health has been established at Cornell University, with the co-operation of the New York State Department of Health. The school offers a course of twenty-four lectures by eminent sanitarians. President Schurman and Health Commissioner Porter hope that they have laid the foundation for an efficient and comprehensive training school for health officers. The movement promises to supply a crying need in the educational facilities of this country.—

OVER-WORK.

Scientists have succeeded in differentiating several kinds of fatigue. There is, first, simple every-day "tiredness," which is rather a pleasant feeling in itself after physical exercise taken voluntarily or at the end of a reasonable day of any kind of work, and is certainly an element in if not a *sine qua non* to the enjoyment of rest and recreation. This kind is harmless so long as it disappears entirely before a new period of exertion begins.

Excessive fatigue, or exhaustion, although it is only more of the same thing, has so many dangerous consequences that for all practical purposes it is a distinct variety. Then there are varieties of fatigue which are not produced by exertion of any sort, but by such parasites as the hookworm and the *plasmodium malariae,* and which have until recently gone under the name of shiftlessness, laziness, or other moral defects; and there are still other kinds which are really early symptoms of certain diseases, and others which are produced by certain other diseases.

The second of these several varieties—excessive fatigue produced by over-exertion—we have for some time been accustomed to think of, under the name of over-work, as ranking with over-crowding in its importance as a social problem—the two together forming a class by themselves far in advance of any other competitors for first place.

In the brief and argument prepared in defence of the Illinois law limiting to ten hours the working day for women in mechanical establishments, factories, and laundries, the knowledge of the world on this subject of over-work has been assembled. Whether or not the law is constitutional appears to depend on whether or not the exercise of that freedom of contract which is by it taken away from the women clearly constitutes a danger "to the public health, safety, morals, and welfare." The point which the counsel who are upholding the law must establish is, then, that a working-day of over ten hours is injurious to women, and through them to the state, and demands accordingly the interference of the police power of the state.

To establish this point everyone who could be found to have borne testimony that is "relevant and material" has been summoned as witness and made to appear through the medium of quotations from his printed words. Similar laws in Europe and in the majority of the United States are cited; scientists explain the ergograph and other instruments of precision and the experiments they perform with them and without; factory inspectors, physicians practicing among factory women, special investigators into social conditions, give their observations and experience; and government statistics about accidents and the health of working men and women help to confirm these opinions.

To a lay mind there seems to be ample evidence for the case in hand. There seems to be, in fact, a very wide margin of evidence beyond what is required to establish the constitutionality of this law. Perhaps the judicial mind requires this—a sort of zone of safety which can be relied on to protect from any possible danger of a too liberal construction—by going to this argument and body of evidence as a source of information about over-work, not as a brief for this particular case, we find its chief interest to lie in what it proves beyond its own point. For after all, a law which merely limits the hours which women may work to ten hardly touches the problem of over-work. And after all, would it not seem that the similar legislation which has been passed in nearly all the European countries and American states where women work in factories in considerable numbers, and which has in no case been repealed but in many cases strengthened after a period of trial, and which has been upheld by the Supreme Court of the United States, is enough of an argument?

Let us, however, leave the judicial mind to work and be worked upon in its own way, and let us revel in the information about over-work which this volume has opportunely put at our disposal.

The starting-point, for us, is the physiology of fatigue. Expenditure of any kind of energy, it has been discovered, manufactures in the body certain poisonous products, which are eliminated during rest, possibly through the action of an antitoxin generated in the body for the purpose. When the expenditure of energy is excessive or the period of rest is insufficient the fatigue poisons are not entirely eliminated before the manufacture of fresh ones begins again. Work done by a fatigued muscle, furthermore, has more injurious effects than severer work done by an untired muscle. Each quarter-hour addition to a working-day, therefore, beyond the point at which normal fatigue is reached, exacts compound interest.

To maintain health and vigor at par the periods of rest should therefore bear such a relation to the periods of work that the fatigue of each day is completely repaired before the work of the next day begins. The ideal for the week-end rest is that it should be an opportunity for increasing strength, so that each working week would begin at a higher level, and not, as it now is for the most part, merely for making up an accumulated deficit. A long working day not only involves a greater expenditure of effort, but it also leaves a shorter interval for rest. If normally, for example, the fatigue accumulated by six o'clock, when work begins at seven in the morning and there is an hour for rest at noon, can be eliminated before seven the next morning, then by prolonging the work until seven the fatigue products in the body are increased by a proportion which we know must be more than one-tenth and the time for counteracting them is decreased by one-thirteenth. If this goes on day after day, week after week, year after year, we get a mathematical calculation by the side of which the calculation of Malthus about the increase of population fades to the palest kind of specter. But this is not all, for many competent witnesses have testified that there is a phychological influence of over-work which makes people more apt to misuse their interval of rest the more they need it. Fatigue weakens self-control, and relief from the strain of over-work is often sought in alcoholic and other injurious stimulants.

The bad effects of over-work on health have long been observed and the observations have been a matter of record at least since the Parliamentary discussions in England in 1831-2. Sometimes it has even been noticed that enforced idleness, with its consequent privations, as in Manchester during the cotton famine, has improved the health of a community accustomed to excessive hours of work.

Over-work lowers the general vitality and renders its subjects peculiarly susceptible to general diseases and to infection. It produces anaemia, which is not only a serious disease in itself but also a favoring condition for many other diseases. It results in serious injury to the eyes and to any organ on which the work may happen to make special demands. But the most serious danger is its tendency to exhaust the central nervous system, which controls all the vital functions. Whether the poisonous waste products of fatigue are the result of muscular or of mental effort, they have a paralyzing action upon the nerve cells, and through them may produce disorders of the heart, the circulation, the special senses, the digestive apparatus, and in fact any function or organ of the body.

Until recently those disturbances of the nervous system which are popularly, though unscientifically, "lumped together under the soul-satisfying designation of 'neurasthenia' " were regarded as an aristocracy among diseases, the peculiar property of brain-workers and the well-to-do. But we know now that, although it is true that the toxin from mental effort is stronger, so to speak, than the toxin produced by muscular contractions which require little brain action, yet they are essentially the same thing, and they have the same effects. The sanatorium of the German Insurance Department at Beelitz, which receives working people of Berlin in need of treatment, has much the same proportion of nervous disorders, and for that matter much the same proportion of other diseases, as one would expect to find in an expensive private institution in this country. "Nervous diseases," it has been said, "are to be recognized as most characteristic phenomena of our modern industries."

A special danger to health exists in the false exhilaration which frequently masks fatigue and tempts to still greater over-exertion.

Over-work also increases the danger from industrial accidents. There are many statistics which show that in general in the hours just before the noon-day rest and at the end of the afternoon, when the senses are dulled and the faculty of attention is weakened by the toxins of fatigue, an undue proportion of accidents takes place.

Inasmuch as physical debility tends to weaken self-control and to produce a craving for excitement, excessive working hours tend to bring about moral degeneration.

Men, women, and children alike, though not in the same degree, are liable to the ill effects from over-work which have been mentioned thus far. There are certain ways, however, in which it is peculiarly injurious to women.

Excessive hours, especially in occupations which require continuous standing, are a cause of many deformities and diseased conditions of the pelvic organs of women, which affect unfavorably their child-bearing functions; and of such injuries to the tissues of the legs and feet as varicose veins and flat foot.

Over-work of women, moreover, is of more consequence to the nation than over-work of men, because it interferes with their ability to bear children, because the children who are born to exhausted women are at birth below the normal in size and weight, and because the mortality among them is abnormally high. The nervous diseases brought on women by over-work, furthermore, exert a detrimental influence on the offspring they may be destined to have.

It is scarcely an exaggeration to say that the very preservation of a people, certainly its welfare, is threatened by over-work, especially if it extends to the women. In certain districts where it has been the rule for several generations actual race degeneration has resulted.

Evidently we should arrange it so that neither men nor women nor children will be obliged chronically and systematically to manufacture in their working-day more toxins than they can eliminate in their periods of rest. Experience has shown that the only effective way of doing this is by legislation establishing a maximum working-day. Our theory has been in America that men may safely be left to protect themselves by means of their bargaining power with their employers, but this theory seems pretty severely shaken by such appalling facts as the twelve-hour day or night, with once a week a twenty-four hour stretch, of large numbers of men in Pittsburgh.

There is, however, no difference of opinion about the greater urgency for protecting children and women from over-work. Women are fundamentally weaker than men both in muscular strength and in nervous energy and are therefore affected more seriously than men by the increasing strain of modern industry—the speeding-up, the monotony, and the strain of piece-work—which has made the working day of fifty years ago impossible for both men and women and which requires further shortening of hours even for men. Wherever accurate observations have been made, it has been found that working women between the ages of fifteen and fifty lose much more time from work on account of sickness than men do, even deducting time lost on account of child-birth; and that they also have many more minor illnesses than men during which they continue at work and are accordingly more sensitive to the injurious effects of excessive hours. A woman's work, morover, is not done when she leaves the factory or shop. Whether married or unmarried, living at home or in a boarding-house, she has more work to do "at home", and her unavoidable domestic duties often lengthen her nominal working-day by several hours. The fallacy in the superstition that "change of occupation is rest" has been exposed by the recent investigations into the physiology of fatigue, which have established that the toxins produced by muscular exertion find their way to the brain and conversely that the poisons generated by mental effort weary the limbs, and that accordingly it is absurd to try to relieve mental exhaustion by violent physical exercise, apparent benefits from this practice being due to the incidental fresh air and not to the exercise. Finally, it is not only because women are themselves more injuriously affected by over-work than men that they need more urgently the protection of the state, but also because they are to be the mothers of the next generation, whose vigor is conditioned on preserving the health of the girls and women now at work.

The problem is, then, to find out in terms of hours at what point normal fatigue becomes pathological fatigue.

In the case of any individual at a given time there are scientific tests which can be applied to determine whether or not he is "fatigued", according to any standard which may be set up. It is hardly practicable, however, to require that these tests be applied to every workman and workwoman before they take their places in the morning and that all who give suspicious reactions be sent home. Even if the process were feasible, there would be the question how much of the toxins remaining were the product of the preceding working-day and how much were due to an unwise use of the intervening hours. Although there are scientific tests for an individual there are almost insuperable difficulties in arriving at a really scientific determination of what the length of the day should be.

As a matter of fact the determinations which have been made by legislators have had little scientific basis. They have consisted as a rule in cutting off something from the prevailing working day, after many expressions of opinion that it was too long, that the workers would be benefitted by the proposed reduction, and that the employers would not suffer from it unduly. When children were working fourteen hours in the textile mills English statesmen cautiously, after some twenty-five years' consideration, decided to limit their hours to twelve. Industries were not ruined, but neither did all evidence of over-work disappear.. Later the same provisions were extended to women, and a little later the twelve hours became ten. In Italy women may not work more than twelve hours, in Holland and Austria and Switzerland not more than eleven, in Germany and France not more than ten. South Australia prohibits more than forty-eight hours a week or ten in any one day. In America we begin at ten hours, in Massachusetts in 1874, and that standard has been adopted in most of the states which have enacted similar laws, though Michigan and Missouri last year established a fifty-four hour week for most of their working women and the Missouri law allows no more than nine hours in any one day and no work between ten at night and five in the morning.

That a ten-hour day is an exceedingly "reasonable" standard under present conditions may be inferred from the fact that it had advocates seventy years ago, that the more favored workmen have been able by their own efforts to secure for themselves one considerably shorter, and that many employes of their own free will require less from their women employes. That the dividing line between a normal working day and excessive hours in the public mind lies somewhere between eight and ten hours seems to be indicated by existing legislation and by the decisions of the supreme courts of Illinois and Colorado that an eight-hour law was unconstitutional. "Some indeed consider ten hours too long a period of labor." The Illinois decision, on the ground that "there is no reasonable ground—at least none which has been made manifest to us in the arguments of counsel—for fixing on eight hours in one day as the limit within which woman can work without injury to her physique, and beyond which if she work, injury will necessarily follow," was given fifteen years ago. Is there not ample evidence now, at any rate, that the "reasonable" limit is nearer eight than ten? If the eight-hour day for men commends itself to the public when it can be secured without legislation, there can be no doubt that it is desirable for women, whose fatigue limit is reached before that of men, and that it should be assured to them by legislation if they are not in a position to secure it for themselves.

Suppose the scientists succeed in producing an antitoxin for fatigue. What effect will it have on our labor legislation? Would we abolish all prohibitions on over-time and all maximum limits, and, by a policy analogous to that which some partisans of the hookworm would have us pursue in relation to child-labor, substitute a requirement that at intervals of, say, eight hours employers should administer to their employes a sufficient quantity of the antitoxin to remove all traces of fatigue before they go on for another eight hours? Or would we work as hard for short hours as we should do now but put the emphasis on the positive arguments of the value of leisure rather than on the negative arguments of the dangers of over-work?—*The Survey.*

EXAMPLES OF WIND EFFECTS ON VENTILATION AND HEATING.

By H. W. Whitten.

The effects of wind blowing against a building are manifold. The most apparent effect is the inleakage of air through crevices, particulary those about the movable windows and doors. In cold weather this inleakage becomes sensible or evident in the form of cold draughts which are often noticeable at a distance from the walls toward the interior.

The volume of this inleakage varies in proportion to the velocity of the wind, sizes of crevices, and means of egress of air from the building. It is also affected in a small degree by the pressure exerted by the expanded warmed air inside of the building. This pressure must be overcome before the outside air can enter. During the heating season this inleaking air, being of a lower temperature than that at which the air inside is desired to be, must be heated.

Both these phenomena are apparent and their effects are common knowledge. Recent investigations have shown however, that the variation in the volume of inleakage due to variation of wind velocity is much greater than was generally believed.

The least apparent effect, and, in the writer's opinion the most important, is the out-flow of warmed air through crevices in the sheltered sides of buildings.

Windows and doors are constructed with the primary object of excluding draughts from outside, but are not so well adapted to prevent air currents escaping from the inside.

The wind strikes an obstruction, a building, is diverted from its natural course and is forced to pass by and over the obstruction. In doing this its speed is accelerated, the parted currents uniting at some distance beyond the building resuming their normal velocity.

This action produces an area of low pressure in the lee of the building which acts as a partial vacuum. This partial vacuum acts as a continuous pump on the crevices on the lee sides. As the pressure of the inside warm air is naturally outward, the combination of this pressure with the partial vacuum outside produces a greater loss than is sustained on account of inleakage, i. e., assuming aggregate amount of crevice on each side to be equal. This loss is greatly increased when other means than wall crevices are employed to admit outer air, such as cold air inlets for hot air furnaces, supply inlets for indirect or fan systems, etc.

It has been well said by a writer on this subject that "we are prone to notice only that which is evident to the senses." This outward flow of air is not attended by disagreeable draughts and, unless special means are taken to detect it, is not evident to the senses.

A few typical tests made by the writer and others the past winter in this connection should be of interest.

The first test is of a school building, rectangular in shape, the ends of building facing north and south, having stairway windows only in these ends; east and west sides divided into school rooms, each having 5 windows 5 ft. wide by 9 ft. high, window sills on a level with tops of pupils' heads when seated; windows having usual clearance; rooms heated by a fan system designed to supply 1800 cu. ft. of air per hour per pupil with inlet velocity of 750 ft. per min.; wind northwest, velocity 14.5 to 15 miles per hour; outside temperature 33°. Room No. 5 situated on the east side of first floor building, one room removed from south end, showed an average rate of supply velocity of 817 ft. per min. and a vent velocity of 340 ft per min. Inlet and outlet of same size. Inlet 8 ft. above floor, outlet at floor and both on opposite side of room from windows. This showed a loss of 457 ft. per minute. An air test of this room showed 10 parts of carbon dioxide in 10,000. This loss was practically all above the breathing line and frequent complaints of headaches among scholars occured.

Other rooms on the east side of building showed as follows:

	Rate of supply.	Rate of vent.
1st floor, Room No. 3	760	410
1st floor, Room No. 6	753	396
2d floor, Room No. 13.	690	315
West Side:		
1st floor, Room No. 7 (partly sheltered)	660	700
2d floor, Room No. 14 (exposed to strongest wind effect)	410	705

TEMPERATURE CONTROL IN USE IN THE BUILDING.

Average temperature East rooms at the breathing level............ 73°; at floor 70°.
Average temperature West rooms, breathing level .... 68°; at floor 58°.

A test of another school building with wind at 18 miles per hour and outside temperature 30°, building heated and ventilated by gravity indirect system, showed an average of 20% loss from the supply ducts in rooms on the windward side and an addition of 60% to the vent velocity.

Rooms on the leeward side of the building showed an addition of 30% to the supply velocity and a reduction of 62% of the vent velocity.

A school building having a few corridor windows on the north side, and school room windows on the east; south and west was tested with typical results, as follows: Wind, 20 miles per hour, direction northwest. Room No. 26 on east side of building, two movable windows, 7 ft. wide by 9 ft. high, one tight window 10 ft. wide by 9 ft. high, sills level with breathing level. Inlet 8 ft. from floor, 4 ft. from east wall, volume of air supply 2340 cu. ft. per min., volume of air passing out vent 1451 cu. ft. per min.

Room No. 28 south side of building, near east end, windows same as No. 26, volume of supply 1863 cu. ft. per minute, volume of air passing vent 1311 cu. ft. per min.

A test made by Mr. A. B. Franklin of Boston and the Massachusetts District Police on a school building some years ago is also interesting. Wind 25 to 30 miles per hour, and blowing toward a majority of windows in the building.

Room No.	Air supply at inlet cu. ft. per min.	Air vent at outlet cu. ft. per min.
11 (exposed)	1536	2367
12 "	1533	2307
13 "	1996	2838
14 "	2244	2990
15 (partly sheltered)	2200	2368
16 " "	760	805
20 (exposed)	1694	2391
21 (partly exposed)	2517	2777
22 " "	1609	2031
23 " "	2253	2762
24 " "	1389	1653
25 (partly sheltered)	2301	2288
30 " exposed)	1984	2394
31 (exposed)	568	1154
32 (partly sheltered)	1602	1773
Hall (sheltered)	7833	5786
35 (partly sheltered)	2153	2442
34 " "	1863	2148
36 (exposed)	933	1404

A high school building was recently tested by Prof. H. C. Anderson of Michigan University, there being some question as to whether the heating contractor had put in a competent apparatus (fan system). The supply seemed of sufficient quantity and temperature, but rooms on the exposed sides of the building and, with all doors and windows closed, it was found that as much air was being removed from the vent ducts as the fan system was supposed to supply. During this test the outside wind was of moderate velocity.

The writer recently had occasion to examine the ventilating system of a hospital. The heating season was over and the fan was not in operation. Supply inlets were in inner walls and about 10 ft. from floor. Vents were about 12 in. from floor. Outside wind 6 to 7 miles per hour. Anemometer showed no movement of air at inlets. Window crevices showed some inleakage on exposed sides and outleakage on sheltered sides. Vents in rooms on exposed sides showed a normal outflow, but those in rooms on sheltered sides showed a reverse current into the rooms. An examination of the attic (which was quite large) showed that the vent ducts ended at the attic floor and were covered with ¼ in. mesh wire screens. There were a few windows in the attic and a ventilator about 4 ft. in diameter was placed on the roof. Very little air movement could be detected through the ventilator which was of the ordinary hood type. The vents from rooms on the exposed side showed an upward current into the attic, but those on the leeward side showed a corresponding downward flow. Average velocity in each case was about the same. Odors of drugs could be detected in rooms far remote from where such drugs were used. The wire screens covering attic vents leading to rooms on sheltered side of building were covered with a cobwebby sort of dust, while those covering vents from the opposite side of building were clean.

Tests of several buildings in which the leakage about outer openings had been standardized by means of a metal expansion joint showed an average difference between supply and vent flow of 10 to 15°|₀, the greater part of this being due to difference in temperature of air at these points.

Heating and Ventilating Magazine.

Use of Ozone Generators in the Ventilation of Buildings.

Installation in the Chicago Public Library.

For some weeks past a test of great importance has been made in adapting ozone generators to ventilating systems in large buildings in Chicago. This demonstration is unique in so far that it is the first actual ozone apparatus installed in a large air duct—used wholly to convey fresh air to various rooms in a large building.

The test referred to, started the first of August and has been in continued operation ever since. In selecting the Chicago Public Library building for this test, the National Air Filter Company, manufacturers of the ozone generator, showed unusual faith in their apparatus when it is considered that 10,000 cu. ft. of air per minute has to be ozonized complete, so that it will be detected in the most remote part of each room, having leaders to it from the main air duct.

The foul air in the Chicago Public Library main reading room, has been the source of much adverse comment and discussion for years, and only last March, Dr. W. A. Evans, health commissioner of Chicago, in addressing a large audience in the lecture room, stated that the air in the library building was entirely unfit for use, being foul and dangerous.

Perhaps no public building in the city has been subjected to so much condemnation on its ventilating system, as the library, and it is, no doubt, gratifying to the authorities that they have at last found a solution for this troublesome condition.

Just what has been accomplished, is this—

1. The complete deodorizing of the main reading room, freeing from the air that obnoxious personal aromatic odor which has for years so thoroughly permeated all papers, books, furnishings, etc., in this large room.

2. The injecting of absolutely fresh sterilized air in the room at all times and reducing the humidity in the various rooms during hot and oppressive days of last summer.

3. The disinfecting of all books, periodicals, etc., on shelves, racks and tables which are of easy access to the public at all times.

4. The perfect comfort at all times that is experienced now when occasion requires a visit to the large reading room and other rooms where, formerly, it was impossible and unendurable most of the time on account of the lack of fresh air and offensive odor at all times present.

The demand for fresh air is, of course, much greater in the winter than in summer, in the reading room. The average attendance is 400 in the winter months and 200 in the summer months.

The air ducts of the ventilating system being so complex in the library building, it affords only the north portion of the building for demonstration, but inasmuch as the ozone generator installed in the air duct in the basement, proved of sufficient size, capacity and efficiency, little remains now to be done in equipping the other remaining air conveyors with similar ozone generators.

The ozone generator installed in this large air duct, measuring 6 ft. x 9 ft. is the largest unit built for this purpose, consuming about 6.5 amperes of electric current per hour with a discharge of more than 15,000 cu. ft. per minute.

In dimensions the generator is 6 ft. high, 11 in. thick and 1 ft. wide, encased and inserted in the opening of the duct to permit the suction of air to pass through it, thereby becoming charged completely, with ozone. By placing the ozone generator between the fan and spray of water (used in washing the air) greater efficiency was obtained than in placing it in front of the spray and thereby losing a large percentage of ozone which the water would naturally take up. It should be added that the generator is the result of the work of S. C. Shaffner and S. T. Hutton, electrical engineers of Chicago, who combined their ideas and developed the ozone generator to its high state of efficiency.

From a feed wire of 110 volts, a connection is made to a step-up transformer which discharges the current at a voltage of about 7,000 volts, which feeds into the series of electrodes, which are in the form of ordinary hair brushes. A static electrical charge is maintained, playing against series of glass plates. Through this blue electrical discharge of 7,000 volts, air is forced, electrocuting all bacteria, germs, etc., giving forth a purity of ozone gas of 97.1 per cent, the highest and purest yet obtained. When the filtering electrodes become dirty or clogged, they are easily rubbed together and cleaned as one would clean two hair brushes. Placed back in position they are as good as new and will generate their full capacity.

Ozone has just been found to completely deodorize stale milk, cream, butter and other cream products, and several large creameries are using it in their plants in Chicago, employing in each case, an ozone generator especially designed for the purpose.

Other uses of ozone are constantly being added to the already long list, such as the aging of wine, curing of tobacco leaf, tanning hides, purifying water, etc., etc. Already a large number of offices are equipped with various sizes of these generators in Chicago and elsewhere. Especially have these generators met with remarkable success in New York where apparently the public has taken to them more quickly than in Chicago.—*Heating and Ventilating Magazine.*

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NOTES AND COMMENTS.

—THE INDIANAPOLIS CONVENTION of the American Physical Education Association and two of its allied sections (the Public School and the Therapeutic section) in conjunction with the Department of Superintendents of the N. E. A. and of the American School Hygiene Association was a great success. Naturally it was impossible for any one to go everywhere and hear all the interesting papers and discussions. Five days and nights of lectures, conferences, visits to schools, receptions, smokers, pink teas, etc., etc., are too much even for a teacher of physical training. Yet in looking back upon the strenuous days we have the impression that the joint meetings have been a great success. We saw more of the school superintendents than ever before, and they were present in large numbers at our meetings. Another praiseworthy point was the fact that the teachers of the middle west had assembled in Indianapolis in large numbers and that they took an active part in the deliberations.

At the business meeting of the American Physical Education Association Mr. George Ehler of Baltimore, Mr. Wilbur Bowen of Ypsilanti, and Dr. Robert Fischer of Indianapolis were elected to represent the members not belonging to a local association, in the national council.

At the meeting of the national council, after the customary routine business had been disposed of, the circular letter of the Philadelphia Physical Education Society proposing a change in the constitution was debated upon. After an interesting discussion during which the several points of the circular letter were debated upon the following resolutions were adopted:—

Whereas, It appears that the provision of the Constitution, concerning the membership and location of the Executive Committee is capable of differing interpretations, and

Whereas, a literal interpretation would exclude the present President and Secretary from said Commitee, which would be inimical to the best interests of the Association, and contrary to what is believed to be the spirit of the Constitution, and

Whereas, the appointment of five members to such Committee, besides the President and Secretary, making a Committee of seven, would be equally unconstitutional, and

Whereas, it is proposed to introduce an amendment to the Constitution at the next annual meeting of the Council for the purpose of doing away with an Executive Committee, therefore be it

Resolved, that it is the sentiment of the Council that the present Organization of the Executive Committee is in harmony with the spirit of the Constitution and that most likely to further the best interests of the Association.

If one were asked to state in a few words the prevailing "tone" at the convention it would be that practically in all papers and discussions the tendency was to condemn specialization and to advocate general and all around physical training. This was to be expected in a convention where the keynote was "education" and "hygiene." How the masses of pupils are effected by light, air, heat, exercise, diet, etc., were the problems discussed. If the readers of the different papers took a decided and sane stand on these questions, the speakers during the discussions were also very emphatic in their utterances. To us it appeared that the whole gymnastic problem has never before been presented so consistently and so broadly in its educational and in its hygienic aspects. One almost forgot that there also was a not-to-be-overlooked competitive element in it.

NOTES ON THE INDIANAPOLIS CONVENTION.

(Being mainly extracts from the "Indianapolis News".)

In the following we bring a few extracts from papers read by people not in the physical training profession.

When he attacked athletics as at present existing in the schools and colleges, Herman H. Horn, Professor of Education, New York University, was speaking on the subject, "The Principle Underlying Modern Physical Education." He explained that physical education should be so framed as to be good for the mind as well as the body, and that mental education should be so framed as to be good for the body as well as the soul.

"But," he said, "present day athletics are not of this class. Modern athleticism has taken the place of true sport and one of the worst features of this situation is that college athletics are controlled by the alumni and the graduates out in the world. They insist on a record-breaking team which will furnish a carnival of contest for one, two, or three days each year, so they can get together and yell and gloat over the victory won at the expense of injuries to their opponents. This all results in great football crowds and in prize fight crowds that gather to see contests in which the body is abused. It means that there must be victory at any cost; it means turning legitimate victory into a gamble; it means the cultivation of animosity toward the opponent; it means the overtraining of a few students in the college who do not need the training and the undertraining or neglect of the many who do need it; it means the neglect of weightier and more important things in the school life.

"Football needs revision and reform in spirit as well as in rules. There should be a love of fair play. There is too much team play to permit of moral control. The demand is for a winning five, a winning nine or a winning eleven. Track work is better, because it is more individualistic. But even in track work the candidate must beat a record. Unless he can beat a record he can not get on the team or on the track or field.

"There should be more interclass and interdormitory contests and fewer interschool contests. There should be less brute force; less hero worship of the individual who has broken a record or injured a rival; more grace and less bodily injury. No first-year man should be permitted to take part in an interschool contest. This would mean that in after years we should find less nervous strain in the former athlete; fewer persons suffering from old injuries; more care for the physical side of a man; a more vigorous type of man and better physique. There should be less idle amusement and more rational education.

"These wrong methods in athletics also do another harm. They compel the mental student to devote more of his time to his studies than his fellows of the select few, because he is not interested in their games, which monopolize the student body. He becomes isolated. The result is that he studies more and advances more rapidly in his mental work. He outstrips the others and stands highest in his class. Thus he is compelled to neglect his body while training his mind.

Dr. Luther H. Gulick, in speaking of "The Health of the Teacher" said, that most of the ventilator systems in schoolhouses are like prohibition—they do not work. "You will notice that rooms in which there is a ventilating system are stuffy," he said, "although the air is as pure as the air outside. This is due to the artificial heat employed. If you will keep the air free from odors it will not hurt you to breathe the air in any room. But it will cause you discomfort, and that is what causes the trouble. I say to you, open the windows at the end of each school period and then have the children run and play and take exercise in the fresh air which comes in. Cold air is detrimental without exercise because it reduces the temperature of the body below normal. But with exercise no harm will come from it. If a person who leads a sedentary life can get outdoors every hour or two and take a few breaths of good fresh, cold air he will feel better and be stronger."

"The good health of the teacher," he said, "profoundly affects the good health of the pupil, because the feelings of the teacher are a controlling factor in regulating the temperature of the classroom. Teachers in poor health, with low vitality, feel cold in those temperatures which are best for learning and best for the comfort of well children.

"Upon the health and efficiency of the teacher rests the entire educational program. The feelings of the teacher largely govern the vigor and time of the school gymnastics, the enthusiasm and intelligence with which the exercises are administered, the prevailing atmosphere of the school as to whether it is primarily one of searching for faults or the discovery of success—the one making for discouragement and deceit, the other for joyous, enthusiastic co-operation; the one the habit of success, the other the habit of failure.

"The dominant basis of the primary qualities upon which successful teaching depends—the common, human qualities of enthusiasm, interest, sympathy, good nature, patience—is good health.

"The primary qualities which enable pupils to achieve the desired results in education are interest, attention, enthusiasm, concentration. A dominant factor in each of these is good health."

In view of the importance of the personal health of the teacher and her knowledge of and ability to teach hygiene, Dr. Gulick, in conclusion, suggested that these things be recognized in the following ways:

1. Personal health and knowledge of and ability to teach hygiene should count in examination of teachers for licenses.
2. Hygiene should be an important topic in the normal schools.
3. Promotion of teachers should depend partly on their personal health and the health of the class.

The thought that their personal health and the health of their pupils should enter into their fitness for promotion will horrify thousands of our grade teachers, and principals, who still swear by the three R's.—Ed.

In speaking of "Humidity and Scholarship" Mr. W. E. Watt, principal of the Graham school, of Chicago, said:

"This is the greatest subject before the educational world today. Look over the world and find the moist places, the dry places and the cold places. In the cold places you find it is necessary to raise the temperature from a low one to a high one. The area of the surface of the earth where there is the least respect for parents and elders on the part of the youngsters is the area I am going to speak about—where there is the greatest disregard for law, the most flagrant, vicious and studied violation of law by men and women of keen intellect and great ability, is the northern half of the United States.

"The reason for this, as I believe, is that we have progressed so beautifully in our system of scientific investigation that we are able to deliver air at 70 degrees or more, regardless of what the temperature is outside, and in that air there is no adequate supply of humidity. This causes us to get a bulge in our heads, to become more or less insane, dull or stupid; more or less subject to attacks of catarrh. And this is found in our homes and in our schools. These conditions prevailing in our schools cause boys and girls to become bad, even vicious. Air taken from a low temeprature and raised to a high temperature regardless of moisture causes these things. Taken at zero and raised to 70, air requires about twenty-two times as much moisture as it began with. Don't you think that by setting pans in a room you can get anything like the humidity that is needed. To get it up to the proper percentage of moisture requires more than evaporation.

"We have had explosions in all our great mines, explosions of gas they were called. The task was given to find out how these explosions came. Instruments did not show there was gas in these mines or very little. It was at last discovered that the explosions occurred only in the early winter, and this, too, where there are great ventilating shafts. In summer when these mines are usually wet these explosions do not occur. In the same mines where you find mechanical ventilation you find that the mines become dry on the approach of winter. Dust gets into the dry and thirsty air of the mine, extremely minute dust. In the summer there is no dust in the mine. The mine is drier than a powder horn and filled with this dust. And the mine explodes. It is an explosion of dust because sufficient humidity was not put into the atmosphere of the mine.

"If this extremely dry air will pick up and carry these fine articles of dust the dry air will carry such particles into the schoolroom and with it a multitude of germs, and the result to pupils and teacher is disastrous.

"In my school we have two rooms that were opened out to the air in zero weather without heat except that from the children's bodies; and we also have the first free air kindergarten in the world. In those two rooms we save one-fifth of the coal bill, and while we have lowered the temperature by the introduction of free steam, we have given the proper amount of humidity. An air that is excessively dry attacks our skin at every point and makes a little ice machine all over our skin, and this, no matter what the temperature is. Worse than this, air that has no moisture in it or very little is a great conductor of heat by radiation. When you reduce the temperature below the natural point there takes place from every body a rapid radiation.

"Now do you see why the old maids and men are cold when the temperature is above 70. The trouble is the excessive dryness of the air. In New York, temperature in the schools has been lowered by legislation down to 65 to 68 degrees; Boston, 65 to 67 degrees. In London the schoolroom temperature is 60 degrees. But we can not stand a temperature at 60 degrees when the air is drier than the desert.

"We have put into our Graham school steam jets, and we find that on an ordinarily cold day it is necessary to turn that steam on full tilt, and the teachers there know that the steam is their life perserver. We have schools in Chicago where the temperature is up to 80 and above, and drier than a desert. The air they are pumping into these children is the kind that will kill sage brush or the hardiest cactus.

"I asked a physician to inspect ninety children in one of my rooms. In this room he found only two children with catarrhal nasal discharges. In another room where the free air was not allowed, he found among the same number of pupils forty catarrhal subjects. He pointed out in this room the dull and the bright pupils and the dull, slow and stupid ones were catarrhal. You can reduce temperature to 62 or even 60 if you supply the humidity and you will greatly increase the capacity of the children to learn.

(This is a splendid article to make extracts from. Have these read and debated upon during your teachers' meetings.—Ed.)

During the debate Dr. Woods Hutchinson expressed the following views:

"Studies have been made of the percentage of children that have been retarded behind their grades. It has been found that anywhere from 20 to 40 per cent. of the school children of the larger cities are two years or more behind their proper grades, partly due to physical defects, partly due to bad air of the school rooms and partly due to inadequate methods of teaching. We are much inclined to believe that the confinement of the child in the schoolroom has gone to an injurious extreme. The best experience of pedagogy now believes that no child under twelve years of age should be kept at one subject for more than fifteen minutes at a stretch. It is believed that shorter school hours, more gymnastics, more dancing, more play, more manual training will give as rapid progress with much better effect on the health of both children and teachers. Much of the time spent in the schoolroom is wasted in grinding into children mechanically what they would gladly learn of their own accord if taken at the right time or even if left to themselves entirely.

"There is now a strong tendency in all the best schools to teach the child by letting him see things and do things, to find things out for himself instead of perpetually talking about things and reading about things and of being told about things by the teacher, out of a book.

"I think the playground is practically as important as the schoolroom. Whenever a new school building is erected at least half the money should be spent on the playground. The work on the playgrounds should, however, be intelligently supervised. The proper place for children to learn is not sitting still, but on the run. The only adequate way to ventilate the schoolroom is to turn the youngsters out of doors.

"It would not be a bad thing to have some arrangement in the cloakrooms of the schools by which, at times, the garments of the children could be fumigated. There are times when it would be a good thing to do this and also to fumigate and disinfect books and pencils. But there are more important things. The advantage of teaching the child by doing things himself, for himself, would be that there is need for it in the awful break that now exists between the school and practical life.

"The aim of the schools is too much to make literary and clerical persons, and in our cities children have no longer the opportunity to get that training for real life that is afforded in the country. The school has now got to make good for them or turn the work over to some other agency that is yet to be developed.

In Dr. Hutchinson's paper "Which is Man's Life, His Work or His Play?" he said:

"Here is a question: Do we work in order that we may play, or do we play in order that we may work." "Ordinarily we would answer that we play in order that we may work better, but this is a mistaken answer. The fact is that we work to make money with which we may play afterward. We seek to make money and to lay it by so that in after years we may have a good time and enjoy ourselves. Now, what are we doing to train the children to enjoy themselves intelligently and broadly. We are teaching them to make money, to acquire riches, and to gather resources, but we should also teach them how to play in the right way and how to use that money properly. I do not believe we ought to teach our children to hoard their money and put it away just in order that it may afford them pleasure afterward. Men should live as they go along. We should live as we work. Don't wait until you are dead.

"Then the question comes up. What is play? By the term play we mean everything that adds to the enjoyment of life and which does us good. It may be one thing or it may be another. It is said that in England there is more money invested in pictures than in railroads. .The English people find enjoyment in pictures. Pictures afford play for them. We have in this country almost as much money invested in churches as we have in mines. Churches offer pleasure and enjoyment to many people, and they offer an incentive to something higher. Churches are not wealth producers, but they give a man an opportunity to relax from his work.

"It is said, too, that we spend a billion dollars a year for alcoholic drinks for the pleasure of the American people. Now I do not mean to associate churches and alcoholic drinks together, as the savages associated cows and comets because both had tails, but I am showing what play costs in this country. Then there is the tremendous cost of tobacco. It is said also that we spend $200,000,000 a year for theaters and sports. These furnish amusement and are in the nature of play for us.

"We should make better use of our amusements and our play. We should get more of them. A boy grows to manhood and works to get a house of his own. He takes pleasure in his effort to acquire that house, and his work becomes his play for that reason. He gets the house and enjoys it. Thus we see that successful play runs alongside work—the two travel together. Men must work hard for a living—shall they do it enjoyably or shall they do it grudgingly? We should train the child to fall in love with his life's work. Then he will become so pleased with it that he will be glad that he chose that particular work as his life's work.

"We hear much about the terrible ravages of death among those who enjoy themselves. They call it the result of diseases of play, but the diseases of work kill their hundreds of thousands, while only hundreds or thousands succumb to the diseases of play—even including dissipation and wine, woman and song.

"We say that when a man gets old he does not enjoy himself and that he does not have any pleasure. We say that when a man gets old he quits playing. The fact is that when a man quits playing he gets old.

"And it is said, too, that play costs money and that you can not play without money. It is always the things that are expensive and luxurious that men desire for their amusement and pleasure. But this is wrong, too, for the very best things for our play are the free things. They are the things that cost nothing.

"The time will come when the craftsman will be the master of our civilization. I remember when in San Francisco apparently the two extremes of social condition were represented by the educators on the one hand and the bricklayers and the hod carriers on the other. Now, however, the educators in San Francisco are receiving from $75 to $90 a month for their services, while the bricklayers are making $200 a month laying brick. Therefore, if the artisan and the craftsman is to become the master of our civilization let us undertake to show him how he can get greater enjoyment and pleasure out of his work. Let's make his work more enjoyable."

The second paper of Mr. William E. Watt is as interesting to us as his first. It was entitled "The Playroom Instead of the Schoolroom." He said in part:

"We have read of the decline of Rome as being due largely to the enervating effects of the warm bath; but the warm bath does not destroy vitality one-tenth as completely as does the hot, dry air of the common schoolroom in the northern part of the United States. We have improved our systems of ventilation until it is common boast of engineers of public school buildings that there is delivered to every classroom a sufficient quantity of air at a proper temperature to insure perfect sanitation.

"No greater mistake can be made than thinking that hot dry air blown vigorously into a schoolroom where children are sitting is good for them. In the first place, it does not reach all alike. The common school ventilation works for the purpose of getting a quantity of air into the room and out within a certain time. It cuts a tunnel through the poisonous air of the schoolroom and makes a draft there while most of the air in the room is unchanged or merely turned over gently.

"Because the air from outside the building must be raised in temperature sometimes sixty or seventy degrees, and no provision is made for the required humidity that should be present in order to make the schoolroom tolerable, we are promoting weakness, catarrh, and all germ diseases by supplying air drier than that of any desert—air that is fatal to plant and animal life when long exposed to it.

"I want to see the natural resistance of the child raised to such an extent that he can not be made weary with any ordinary exertion. This can not be done if the child is to sit for four or five hours in a dry, hot atmosphere such as kills sagebrush. If he is imprisoned in air that will kill the hardiest cactus. I do not expect him to have any resisting power to speak of. I expect such a child to require the closest coddling the nursing art can devise. I expect him to keep anxious parents up nights watching to keep the breath in his body. I expect him, as a rule, to die before arriving at maturity. In fact, if he manages to live and arrive at maturity and full stature, I do not by any means expect that he will be able to do a man's work in the world. He will be a feeble and inefficient member of society.

"This is my arraignment of the public school system of the northern part of the United States: We are making children stupid in our arrangements for teaching them. We are giving them headache and catarrh. We are increasing their tendency to swelling glands. We are fostering tuberculosis and all the foul air diseases in our warm, dry schoolrooms, where true activity of mind or body is precluded. We are preventing the natural action of the mind which makes once telling of any value. We are destroying the ability of a child to think clearly or to believe he has any mental powers to speak of. We are lowering resistance, so that many become invalids unnecessarily. We are selling too many short coffins in America. We could better raise most of the children we are burying if we would but give what the children crave and ought to have, activity, right atmosphere, cheerful curroundings.

"The playroom is not for play. It is so easy to mistake one's meaning that I wish to make this very plain. There is play in every schoolroom. There should be work in every playroom. But we call it a playroom because there is so much play in it, and because the work done is so easy that it is part of the play. The matter of learning is incidental.

"To fit a child physically to wish to learn is our great end. I have pointedly and repeatedly instructed my teachers in the first grades not to teach the children anything. I have asked all teachers in open air rooms not to do anything at any time when they do not feel like doing it. They must wish to do the thing or I do not wish them to undertake it.

"The children are not to be given anything to do which they do not undertake with avidity. I do not mean to say that a child should do as he pleases. But I do say that he should be so fitted physically that he will please to do the thing which is right and natural and educative. There is a great difference between telling the weary he need not do anything he does not wish to do and fitting him to wish to do that very thing. We are not judging our success by what we get out of him, but from his attitude toward the thing proposed.

"Think of the difference between the mind of the weary child, nose stuffed full of foul matter, head swimming, eyes bleared, ears inclined to ache, other senses dulled, bones aching with confinement in hot dry air, and the mind of a child who is fresh as a daisy, full of kindly activity, curious to know, satisfied with good things, and so full of resistance that he can walk into a contagious ward and come out victorious or enter upon vigorous play or work without any signs of fatigue.

"Do not mistake me as advocating play in an ordinary hot dry room as capable of fitting a child up to this stage of physical perfection. That is impossible. Do not try it. But I do advocate the use of a proper hygienic schoolroom where God's pure air is given directly to the lungs of little children, where the impulses of life need not be smothered, where joy, freedom and kindness are their environment, and where they are not fooled into thinking they can learn and then shown how impossible it is under the circumstances.

"The wonder in our educational work is not that many children are retarded in the grades. The wonder is that any of them at all get through the course even with the shams of knowing which are common to our graduates.

I know a treatment for your child which will cut down his mental ability to one-tenth of what it should be, making his course in school at least ten times as difficult as it ought to be. .That treatment is the kind that is regularly given in the school where the temperature is above seventy and the air dry as Sahara or drier.

"How to teach in a playroom is a separate art from the work done in our normal schools.If I had my way in this matter I should merely choose big sisters for these little people. Instead of calling them teachers I should denominate them "showers how," or something of the kind. We are getting children to know a great deal without any formal teaching. They catch the ideas as they learn the names of their playmates. In our first grade reading there are no mistakes made.

"The ordinary child comes to school with a consuming desire to learn to read. After he has been in the routine of the school a while under ordinary conditions, unless he is a wonder, he finds he is forgetting much faster than he is learning. It is only by an immense amount of review work that he is able to get up a few hundred words in the course of a year. He feels the dullness that comes from confinement in hot, dry air. He sees the road to learning to read such a long one that no child in the whole school has passed entirely over it. He becomes depressed, not only with the length of the course, but also with his own particular dullness. As a result, he loses his good conceit of himself. He drops into the formal routine of the school, and the fine ability he brings to the teacher at the opening of the year gets so blunted and obscured with hard work without much result that he becomes easily a dullard.

"That sort of work is not education. There ought to be another name for it. But the work done in the playroom where fresh air and good health raise his resistance to disease to normal does a great thing for him mentally. It fits him to learn so that no skill is required in the shower-how. Instead of being formally and definitely taught, he learns by absorption and accident. What he learns he has the ability to retain. What he learns he learns solely because he wishes at the time to know it. That he remembers. What he learns he gets like lightning, and when he wishes afterward to use it, he does not have to scratch his head a long time to try to remember it. It lies in his mind in shape for instant use.

"The ordinary school makes dullards and destroys life. The playroom makes brilliant pupils and preserves life."

EXTRACTS FROM MEDICAL JOURNALS AND PHYSIOLOGIC AND HYGIENIC NOTES OF INTEREST.

By D. M. FERD. KROGH, M. D., Philadelphia.

—If the percentage of tuberculous children recently ascertained by an investigation in Stockholm, Sweden, (1.61 per cent), were applied to the schools of the United States, there would be 273,700 children between the ages of eight and fifteen who are positively affected with tuberculosis, according to a statement issued by the National Association for the Study and Prevention of Tuberculosis. As contrasted with this figure, there are only eleven open-air tuberculosis schools in the entire country.

Special schools for tuberculosis children have now been established in Providence, Boston, New York, Rochester, Washington, Hartford, Chicago and Pittsburg. New York has three schools and Washington, D. C., two. The board of education of New York City is proposing to establish three more, and similar institutions are being planned in Detroit, Buffalo, Philadelphia, Cincinnati and Newark, N. J.

At the lowest estimate, however, even with all the schools now in operation and those proposed, accommodations will not be provided for .4 of 1 per cent of children who need this special treatment. In a large number of cities, children with tuberculosis are excluded from the public schools, but in most instances no special provision is made for them.

In cities like Providence, Boston and New York, where out-door schools have been conducted for two years, the results obtained from treatment of children in special open-air schools seem to show the great advantage of this class of institutions. This, coupled with the experience of open-air schools in Germany and England, proves that children can be cured of tuberculosis and keep up with their school work, without any danger to fellow pupils.—*N. Assn. Press Service.*

—"Adenoid vegetations, when small in amount, and not causing any of the indications which the author enumerated, should be left alone, and may be treated by hygienic measures and local astringents. The author has found hydrargyri chloridum mite, 1-10 grain tablet, taken three times daily after eating and continued for thirty days, stopping a week and then continuing again for a month, and so on until a year or a year and a half is passed, of the greatest benefit in reducing the size of these vegetations.

The indications for the complete removal of adenoid vegetations are as follows: (1) Nasal obstruction, causing mouth-breathing and its sequels;

(2) recurring attacks of earache; (3) stupidity and inability of the children to concentrate attention; (4) stunted growth. and in all cases of purulent otitis media in children; (5) in infants whose inability to nurse is due to adenoids; otherwise the author never operates upon infants under 1 year of age, and believes it a crime to do so."—*Dr. Herzig in New York Med. Journal.*

—THE PHYSIOLOGICAL ASPECTS OF VENTILATION. Dr. Theodore Hough, of the University of Virginia, said there was no argument against the hygienic importance of ventilation. The history of the subject showed that it was not so simple as often supposed. The poisonous material in the air of the room did not come from the lungs, but from the skin, clothing, decaying food particles in the mouth, or catarrhal exudates from the air passage. It was important to distinguish between the acute effects which were produced by prolonged exposure. The toxic material, so far as it was a factor, did harm chiefly when it acted over a comparatively long period, and they must seek elsewhere the explanation of the acute effect. While the introduction of fresh air was of great importance in removing the unfavorable physiological factors, it was even of more importance to maintain an even temperature of 68 to 70 since at that temperature the humidity was almost negligible, while the other ill effects, especially on the nervous system seemed to be less noticeable and less important.—(*The Doctor.*)

—Koch's dictum that direct sunlight kills the tubercle bacillus within a few minutes to several hours has been confirmed by all workers except Feltz. The time required depends upon the brightness of the ray, the time of the year, the latitude, the temperature, the thickness and opacity of the layers, the medium in which the bacilli are embedded, and other conditions.

This action of light corresponds to the well-known germicidal power of the ultra violet rays of the spectrum upon other non-sporebearing bacteria and must play an important role in diminishing the danger from tuberculous sputum and dust out of doors and in sunny rooms.—*M. J. Roseman, in Southern Practitioner.*

—INFLUENCE OF ATHLETICS ON LUNG CAPACITY. Du Bois Reymond has studied the pulmonary vital capacity in a series of athletes and non-athletic university students, and finds that the lung capacity of the athlete averages about 330 c.c. greater than that of the non-athletic students. The greatest difference is among singers and the smallest among swimmers. The average improvement in breathing of 330 c.c. in an average capacity of 4000 c.c. means a respiratory improvement of about 8.2 per cent.—*Med. Record.*

—"For the purpose of correcting the numerous cases of stooped back, spinal curvature and flat chest that exist among the school children in Philadelphia, a gymnasium has been installed in the Lyons School, Catharine street above Tenth. The experiment will be the first test of its kind attempted in this country. It was brought about through Mr. William Stecher, physical director of the schools, and Dr. Walter Cornell, a medical inspector. Dr. Martin G. Brumbaugh, superintendent of schools, was also one of the sponsors of the plan.

The gymnasium is to be in operation only after school hours. A physical director will supervise the exercises. Doctor Brumbaugh said that provisions are being made in the basement of the new school at Eighth and Mifflin streets for exercises of this kind, and that when the building is completed the room at the Lyons School will be abandoned."—*Philadelphia Public Ledger.*

—Whether the muscles of one side are stronger than those of the other in lateral curvature of the spine is of very little consequence. But it stands to reason that a pull on one side with a relaxation on the other will cause a concavity of the spinal column toward the side the pull or contraction of the muscles is on. We may therefore infer that the weakest muscles are found on the convex side. However, our main object should be to instruct teachers to be ever watchful and guard against faulty posture of school children. Correct posture must always be maintained. Accuracy in gymnastics must be insisted upon.

In treating spinal curvature the muscles of the convex side of the curve should be strengthened in particular, but a general strengthening of all muscles will bring about the needed equilibrium. In treating children the flexibility of the spine must be maintained. Massage of the muscles on the convex side may be added. Exercises should be taken at least three times daily. The main object in view must be to secure and maintain a flexible spine with strong muscles to hold it in position. Manipulation and braces are necessary only in severe cases.

—At the University of Colorado, at Boulder, the Department of Biology offers an elective course in Sanitary Science and Public Health. There are two lectures per week throughout the year given by the professor of biology with occasional assistance from members of the medical faculty. Although merely an elective subject it has always been popular. About one-third of all the students in the College of Liberal Arts attend these lectures sometime during the four years of their residence.—*American Health.*

—The pernicious doctrine that sunlight is injurious to consumptives (and other people) has called forth an adverse criticism from Dr. S. A. Knopf in a recent issue of the New York Medical Journal. We quite agree with him that any theoretical objection to the free admission of sunlight, the greatest known destroyer of the tubercle bacillus, into the living rooms of a consumptive is a dangerous and unfounded assumption that may be productive of much harm: just as the denial of the benefits of sunlight, in temperate climates, upon the bare skin of the human body is a direct assault upon the well-fixed opinion of physicians and hygienists and particularly, we might say, of neurologists. As has been said a half hour in the sunlight means a good night's sleep.—*From American Health.*

—FAULTY BREATHING, in other words, deficient aeration, produces two effects in the blood: it diminishes the supply of oxygen and increases the amount of carbonic acid. While it is true that the respiratory center may be trained to bear at times a scanty supply of oxygen for a longer period than usual—as, for instance, in the case of divers—an insufficient supply in the blood is incompatible with good health. Oxygen is the motor power of muscles. Muscular power, therefore, is in direct proportion to the efficiency of respiration. It is a matter of common observation that, other things being equal, an active outdoor life favors increased muscular power, whereas a sedentary life begets weak and atrophied muscles. Those races whose manner of living is of a more primitive character suffer little from disorders due to faulty or deficient respiration. It has been well said that civilization bred tuberculosis among our Indians. Child bearing is comparatively easy among such women, and the physician who treats female disorders finds little to do. Constipation, too, a disorder so prevalent among civilized people, is due in most cases to insufficient exercise in the open air, and is uncommon among these children of nature.

It is not usually a normal respiration of cold air that is responsible for attacks of acute sore throat, because so long as the nose is in a normal condition the air inspired through it is moistened and its temperature raised sufficiently to render it harmless to the throat. This is not the case, however, in individuals whose noses are sufficiently abnormal to necessitate mouth breathing. During the first attacks of a nasal catarrh the trouble is purely nasal; later, however, the disease extends to the throat through continuity of substance, aided by an increasing size of the bones of the nose, rendering the patient a mouth breather, hence the necessity for a careful examination and treatment of the nose of those susceptible to nasal catarrh, so that nose breathing may not be interfered with. In addition the individual should wear shoes with heavy soles loosely laced about the ankles, thus keeping the feet warm and not interfering with the circulation of the feet and lower limbs.—*The Dietetic and Hygienic Gazette.*

—The treatment of flatfoot is described by Dr. Gustav Muskat, Orthopedist, Berlin, in an article in the "Monatsschrift f. d. physikal—diatetischen Heilmethoden," Jan. 1910. The author states that the main object in view must be to restore the arch. This may be done by manipulation and massage after a hot air treatment. After this the foot is brought into as good a position as possible and then an adhesive plaster band is applied.

The adhesive plaster, 2 inches wide, is fastened on the inner side of the foot and carried over the back and around the outside of the foot, then under the sole and up the inner side of the leg as high as the knee. The next strip is applied slightly overlapping the first. Two circular strips are then applied, one around the calf of the leg, the other directly above the ankle. Flexion of the foot inward and tension of the strips is necessary. The adhesive strips may remain in place for two weeks and can readily be removed by applying benzine.

Massage should be given daily and applied over the bandage.

An exercise particularly recommended by Dr. Muskat is raising the heels while they are separated, holding the toes together.

To prevent the occurrance of flatfoot the author recommends: 1, The foot, as well as every other part of the body, must be taken care of by daily cleansing and cutting of nails in a straight direction; 2, Exercises of the toes must be practiced daily while the foot is bare and the foot must be turned in at the ankle; 3, While standing and walking the toes must be directed straight forward and not outward; 4, Shoes and stockings must not be too short, nor too tight or pointed; 5, Shoes and stockings must be made for each foot, i. e., they must be different for the left and right foot, so that they are shaped like the foot; 6, the greatest length of the shoe and stocking must be at the inner side of the foot; 7, lace shoes are best; 8, while practicing sports and gymnastics attention must be given the correct position of the feet (see 3,); 9, In choosing a vocation the form and resistance of the foot must be considered; 10, Medical advice is to be sought as soon as any trouble of the foot begins.

The Moon and the Weather.

In an address of more than usual interest, delivered at the Meteorological Society by Mr. Richard Inwards, the president, the numerous fallacies which prevail with respect to the weather were exposed. The moon is very generally supposed to have a direct influence upon the weather; but as Mr. Inwards shows, the influence is merely supposititious. As long ago as 1774, Dr. Horsley examined the weather tables of that year as furnished by the Royal Society, and out of forty-six changes of weather only ten occurred on days of lunar influence, only two of them being at the new moon, and none at all at the full. As a result of twenty years' observation, M. Flarguergues, of Viviers, found that the barometer readings, taken when the moon was farthest from the earth, averaged 755 millimeters, and when nearest, 754 millimeters, showing a difference of 1 millimeter, or .04 in., and this in a direction against the theory, the pressure being greater by that amount when the moon was farthest from the earth. The cycle theory, such as that advocated by Mr. MacKenzie, and more recently by Mr. Hugh Clements, has, we are told, broken down, and there is no definite period after which the weather changes repeat themselves. The moon's influence on the weather is negligible, M. Flammarion tells us, and the ideas that the full moon clears away clouds, that beans should not be sown or trees cut down on the wane of the moon, that two full moons in a month will cause a flood, or that to see the old moon in the arms of the new one brings rain, are all, to use an expressive phrase, mere moonshine. They are not only not supported by scientific observation, but are opposed to observed facts. The heat reaching us from the moon would only affect our temperature by twelve-millionths of a degree, and the atmospheric tides caused by the moon would only affect the barometric pressure by a few hundredths of an inch—a quantity far less than the changes which are always taking place from other causes. Even the influence of the halo round the moon has been discredited, for observation shows that it is as often followed by fine weather as by rain.

GIRLS' INTER-CLASS GRAMMAR SCHOOL GYMNASTIC CONTEST.

Philip G. Lewis, Philadelphia.

On four successive Tuesday afternoons beginning April 13, 1909, the girls of the Alexander Henry School held a gymnastic contest which was the first of its kind, for girls, ever held in Philadelphia. That such contests are good for girls is a certainty as the results of this contest proved. Of the total number of 490 girls in the grammar school 349 participated, this being a percentage of 71. In the calisthenics every girl in each class took part. This event took place in the yard during the session and this proved one of the most interesting events, because every girl knew enough about it to take part.

Much credit is due to Miss Laurena J. Williamson, the principal, and her faculty, (all women) who gave their undivided support, making the contest most successful. The primary object of this contest was to get the girls to interest themselves in outdoor play. The most notable result was that the girls got the "playground fever" and through the efforts of their principal and teachers raised enough money to equip the school yard with two giant strides, two swing frames of four swings each, basket ball goals, sand bin, tether ball and several dozen basket balls.

Previous to the contest not one girl in the school had ever been in any kind of competition. They soon became so enthusiastic that one dodge ball team had as one of its members a girl who was lame. Another girl who also was lame and walked with a cane took part in the basket ball throw. Eligibility rules were strictly adhered to and in a few instances a class suffered from this cause. In one particular instance Katie D——, a girl who had been giving considerable trouble in both lessons and conduct, suddenly changed for the better. Upon being questioned as to the cause for her improvement she answered "I want to be on the dodge ball team." She made it and represented her class in all the dodge ball games, in the final game for first honors Katie's class was defeated by a close score, and it took the combined efforts of the teacher, her captain and the principal fully a half hour to soothe Katie's wounded feelings and convince her that she had performed her duty faithfully. Katie plays every day and ever since ranks among the best pupils in her class.

Before the contest commenced Dr. Joseph Ball, the Medical Inspector of the Board of Health, examined the participants and refused three girls permission to participate, on account of their physical condition.

The pupils and teachers of this school have, during a greater part of the winter, played the games and had their physical training out doors. They also have raised enough money to fit up their basement as a gymnasium, where the pupils who are up in their studies are allowed to spend a part of each day. During the clear weather they must play outside.

The following bulletin was posted in the school and served as a notice to the pupils. The contest was scheduled to have taken place one week earlier, but rain interfered.

OFFICIAL BULLETIN

GYMNASTIC COMPETITION—ALEX. HENRY SCHOOL.

APRIL 1909.

April 13th—30 yds. Dash (handicap) 5th grade, 3 yds.; 6th grade, 2 yds.; 7th grade, 1 yd. Throwing Basket Ball (handicap) 5th grade, 9 ft.; 6th grade, 6 ft.; 7th grade, 3 ft.

April 20th—Calisthenics in the yard. Dodge Ball (20 girls on a team) in a 30 foot circle.

April 27th—Standing Broad Jump (handicap) 5th grade, 9 in.; 6th grade, 6 in.; 7th grade, 3 in. Potato Race (6 potatoes) 4 feet apart.

May 4—Hurl Ball (2 lbs.) (handicap) 5th grade, 12 ft.; 6th grade, 8 ft.; 7th grade, 4 ft. Relay Race (8 girls on a team) Handicap.

ELIGIBILITY RULES:

No girls whose class standing or conduct is not "good" is eligible.

Each class may enter **not more** than three (3) in each event.

Girls may enter not more than three (3) events, outside of calisthenics.

Any girl may take part in the calisthenics.

In all events the eighth grade will start from scratch.

There will be a prize awarded to the class scoring the greatest number of points during the contest.

First Place counts 5 points; Second Place counts 3 points; Third Place counts 1 point.

A special prize will be awarded to the class winning in calisthenics.

Prizes will be in the form of flags in the school colors, to be kept by the winning class until the next contest.

Each class should elect or have appointed a captain and two lieutenants who are to look after the affairs of their room in this meet.

Girls are urged to wear bloomers.

LAURENA J. WILLIAMSON,
Principal.
PHILIP G. LEWIS,
Assistant in Physical Training.

RESULTS OF THE GYMNASTIC CONTEST.

The contest took place in the school yard at 3 P. M. on successive Tuesdays in April and May. Judges:—Philip G.. Lewis, Physical Training Assistant; Percival S. Woodin, Supervising Principal of Marshall school.

Calisthenics. (These took place in the yard during the regular session; every pupil in the class contesting.) Winners:—1, 7A, Miss Sprott; 2, 6A, Miss Callan; 3, 2A, Miss Wright.

Dodge Ball. (30 ft. circle.) A team of 20 from each class. 1, 7B, Miss Gill; 2, 5B, Miss Bromiley; 3. 6A, Miss Ide.

Standing Broad Jump (3 entries from each class.) 1, 7B, Louisa Spanagle; 2, 6A, Jennie Hamberg; 3, 6B, Estella Williams.

30 Yard Dash (3 entries from each class.) 1, 6B, Merrill Sedgwick; 2, 6B, Lillie Bates; 3, 7B, Dorothy Mills.

Relay Race (a team of 8 from each class.) 1, 7B, Miss Gill; 2, 6A, Miss Callan; 3, 8A, Miss Wright.

Throwing 2 lb. Hurl Ball for Distance (3 entries from each class.) 1, 7B, Edith Press; 2, 6A, Lillie Bates; 3, 6A, Merrill Sedgwick.

Throwing Basket Ball for Distance (2 hands.) Three entries from each class. 1, 8B, Edna Yarwood; 2. 7B, Ida Roemer; 3, 7B, Louisa Spanagle.

Potato Race (3 entries from each class.) 1, 6A, Anna Brennan; 2, 7A, Marguerite Mawson; 3, 7B, Edna Dean.

Highest number of points in everything. 1, Miss Gill's Class, 7B; 2, Miss Wright's Class, BA; 3, Miss
Ide's Class, 6B.

Total number of girls in the school, 490. Number taking part in Calisthenics, 490. Number taking part in different events, 430. Number of different girls participating in contest (71 per cent), 349.

The following effects have been noted:—

Outdoor play has been greatly increased since the contest; the teachers are out of doors much more than formerly; new games and plays have been learned by the girls; handicapping the events and games by grades serves to encourage the weaker and more timid to take part; a splendid class and school spirit has been developed; preparing for the events gives the pupils something to do during their spare moments; demanding a certain standing in deportment and studies encourages the pupils who are behind in their studies to do better; a contest of this character helps discipline, makes control in class easier because of a better school spirit, happier pupils, more interest in the school and a better school spirit, it also helps to keep some girls; the election of officers in the classes promotes organization, thereby making the pupils self-governing; inter-class games show the value of organized play; finally, the closer association of teacher and pupils during play affords great opportunities for character building; it also gives the teacher and pupils a common interest outside of the classroom, and it raises the moral standard of the contestants.

NORMAL COLLEGE OF THE N. A. G. U., INDIANAPOLIS, IND.

The senior class has elected its officers of the spring term, namely, Alvin G. Hermann, president; Mr. Otto Schissel, vice-president; Mr. Adolph Picker, treasurer and Miss Avis C. Lutz, secretary.

The junior class elected Mr. Rudolph Hofmeister, president; Mr. Wm. Nicolai, vice-president; Mr. Fred Foertsch, treasurer and Miss Corrine Guenther, secretary.

The Stndent's Alliance chose the following officers: Mr. Alvin G. Herrmann, president; Mr. Rudolph Hofmeister, vice-president, Miss Hazel Orr, secretary; and Mr. Apple, treasurer; Edwin Hoppe, turnwart; Mr. Fred Foertsch, Zenzwart; Mr. Plag, recorder; Miss Avis Lutz, postmistress; and Mr. Zabel, songmaster.

During the convention of the American Physical Education Association classes were dismissed three afternoons in order that the students might attend the lectures. They found the lectures very interesting as well as instructive. Among the many superintendents and teachers who visited the college were numerous alumni.

Hazel Cameron Orr, Sec.

VARIATIONS IN SUN HEAT.

Until recently it was taken for granted that the heat given out by the sun was always the same in amount not differing one day from another, or one year from another. But it has been finally ascertained through a long series of expirements, that the amount of heat given out by the sun is constantly varying, and that at times it is not less than one-sixth greater than at other times, a difference amply sufficient to account for exceptionally cool summers or warm winters on the earth. Indeed, there can no longer be any doubt that we owe our weather to a great extent to the solar luminary, and our government is at present engaged in a painstaking study of the subject in the observatory on Mount Whitney, Cal., the expectation being that when it has come to be more fully understood, science will be able by observation of the sun's activity to make forecasts of meteorological conditions for at least six months in advance.—Reader Magazine.

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

—W. R. PITMAN of Brooklyn has presented the New York Athletic Club with a medal that he won at the first bicycle race meet ever run in America—at Gilmore's Garden in 1879. The distance of the race was two miles, and Mr. Pitman covered it on a high wheel in 10 minutes and 58 seconds. It is interesting to note that George Bonhag, the peerless distance runner, goes two miles afoot these days in 9 minutes and 27 seconds.

—DONALDSON, the South African sprinter, recently broke the world's professional record for 100 yds., defeating Arthur Postle, the world's professional champion of Australia, and C. Holway, the American, in 9 3-5 seconds. Donaldson won by 2½ yards, less than a yard separating second and third man. The previous professional record was held by Bethme and Johnson, who covered the distance in 9 4-5 seconds.

Dan Kelly of Portland, Ore., holds the amateur record of 9 3-5 sec.

—AT THE INTERCOLLEGIATE Football Rules Committee meeting held in New York City, Feb. 4 and 5, 1910 for the purpose of diagnosing, sifting and eliminating the hundreds of suggested code changes that were placed before them. Dr. James A. Babbitt of Haverford College best outlined the committee's position. He said that the committee wanted to get the public's opinion and help on the subject of proper and adequate football rules revision. It was realized, he said, that every one had a right to know what went on toward this end. The Committee felt that it would not be true to itself or to the duty imposed upon it unless its position in this regard was made perfectly clear.

So far as rule changes were concerned it was one thing to legislate them and quite another to be certain that what had been put in the code would accomplish the desired result. Five years ago, he pointed out, a radical revision had been made that had kept the game free from serious injuries to any trained players throughout four long, successive seasons. Then, out of a clear sky, had come the lamentable injuries of last year—the result of the coaches having solved the rules.

Following are the suggested changes in the Football Code taken under consideration by the Rules Committee and referred to a subcommittee which is to report at the next meeting of the Rules Committee March 25.

GROUP "A."

1. Seven men of the attacking side on the line of scrimmage.
2. No pulling or pushing of the man with the ball by members of his own side.
3. The first man receiving the ball from the centre may carry it forward anywhere without running five yards out.
4. Some restriction on tackling, either by prohibiting diving tackles or by confining tackling to certain parts of the body.
5. (a) Forward pass to be allowed over any part of the line, or (b) only to players on the ends of the line or behind the line when the ball was put in play.
6. Ends going down the field under kicks are not to be body-checked.
7. Players on either team may use hands or arms to get an opponent out of the way in order to get at the ball on a forward pass.

8. Forward pass touching the ground before being touched by a player of either side may first be touched only by players on the defense, and then, if fumbled, shall be anybody's ball.
9. Players going down the field under a punt are not to approach nearer than five yards to the catcher of the punt, and cannot tackle him or charge forward after the catch unless the catcher starts to run with the ball.
10. Eliminate the onside kick.

Queries in connection with this group:

(a) Is it advisable to allow one man to assist the runner with the ball?

(b) Is it advisable to allow an interchange of players—that is, permit a line man to go into the backfield temporarily and have one of the backs take his place in the line?

Group "B."

1. Seven men of the attacking side on the line of scrimmage. Centre rush shall always be in the centre of the line, with three players on each side of him except when the ball is too close to the side lines to permit this.
2. Backfield of the offense shall be limited to four men—the quarter back, two half backs, and the full back—without permitting of their interchange with line men.
3. Eliminate the neutral zone and the onside kick.
4. Limit the forward pass to back of the line of scrimmage.
5. No runner on the offense shall receive any help until he has reached the line of scrimmage.
6. Any player receiving the ball from a kick that has not touched the ground shall not be approached by opponents closer than three yards until he has touched the ball.
7. Distance to be gained in three tries, seven yards.

Group "C."

1. Set the goal posts back from the goal line six feet.
2. In addition to changing the time of the game from thirty-five to thirty-minute halves, split these halves with intermissions of five minutes, so as to provide four fifteen-minute playing periods. Play to be resumed by the side in possession of the ball at the spot of the last down, at the beginning of the second and fourth periods.
3. When the ball is put in play by scrimmage, seven men shall be on the attacking line of scrimmage, with three of the backfield at least four yards back of the line.
4. No player of the side in possession of the ball shall use his hands, arms, or body to push, pull, or hold upon his feet the player running with the ball.
5. Forward pass may be made and caught only by players standing behind the line of scrimmage at the time the ball was put in play.
6. A player while tackling another should have at least one foot on the ground.
7. The distance to be gained in three tries shall be ten yards between the two twenty-five-yard lines and five yards between the twenty-five-yard line and the goal line.

Query in connection with this group:

Shall teams change goals at the beginning of the second and fourth periods as well as at the beginning of the second half, the possession of ball, down, and distance to be gained to remain the same?

Miscellaneous.

1. A player may once be removed from the game and re-enter it in a subsequent period.
2. Substitute a scrimmage for the original kick-off in each half.
3. There shall be no pulling or dragging of a player after any part of his body except his hands or feet have touched the ground.
4. (a) The ball shall be declared dead whenever the runner with the ball touches the ground with any part of his body other than his feet or one hand.

   (b) That crawling or creeping by the runner with the ball shall be penalized five yards.

   (c) That piling up on such a runner shall be penalized five yards.

—THREE NEW WORLD'S RUNNING RECORDS were established at the Indoor games of the Irish American A. C. Games held in Madison Square Garden Feb. 5. George V. Bonhag lowered the 4 mile record from 19 min. 43 3-5 sec. made by himself in 1909 to 19 min. 39 4-5 sec.

John J. Eller lowered the 70 yd. Hurdle record from 8 4-5 sec. made by Forrest Smithson in 1908 to 8 2-5 sec.

The 2400 yd. Relay record was lowered from 5 min. 6 4-5 sec. made by the 23 Regt. team in 1908 to 5 min. 6 1-5 sec. by the Irish American team.

—THE NEW YORK Fencer's Club Junior Team recently won the Nansique Trophy at the annual fencing contest held at the Central Y. M. C. A. Brooklyn.

The results of the various bouts were as follows:

New York Fencer's Club 5 — New York Turn Verein 0.
University of Pennsylvania 5 — Yale 1.
Columbia University 5 — Springfield Training School 1.

Semi-final bout:

New York Fencer's Club 5 — University of Pennsylvania 2.

Final bout:

New York Fencer's Club 5 — Columbia University 0.

BOOK REVIEW.

—THE NEW GERMAN "YEAR BOOK OF GYMNASTICS" for 1910 by Dr. Rudolf Gasch, has just arrived. As usual its 248 pages are full of interesting matter covering all phases of physical training work. This compact reference book, with its 169 illustrations, should be in the hands of every teacher of gymnastics who can read German. Mailing price 35c. To be had from "Mind and Body," Herold Bldg., Milwaukee, Wis.

—BOX FURNITURE, by Louise Brigham, 5½ x 8 inches, 304 pages. Published by the Century Company, New York. Mailing price $1.75. Here is another admirable help for the occupation work which is yearly gaining a stronger hold as a part of playground work. In this book Miss Brigham shows how one hundred different useful and artistic objects may be made from the ordinary box usually chopped up for kindling wood. The book is practical. First the object to be made is shown. Then in a few words the requirements to make the object are enumerated, and lastly comes a concise description of how to go about to make the article. The book can be recommended to all teachers who are looking for a practical helper telling how to make useful articles with the least expenditure of money. To be had from Mind and Body, Herold Bldg., Milwaukee, Wis.

BOARD OF EDUCATION, CINCINNATI, O.

Fred Medart, St. Louis, Mo.

Dear Sir:—The equipment of gymnastic apparatus of your manufacture recently installed at the Oyler School, certainly seems to come up to your promise, "to furnish the very best." In appearance, the apparatus surpasses anything we have so far put into our schools. The various fixtures and adjustments are simple and look as though they were durable and would stand the strain which will be put before them. Respectfully yours,

Carl Ziegler, M. D. Supervisor of Physical Culture.

MIND AND BODY

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THE IMPORTANCE OF CLEAN AMATEUR SPORT.

By WILBUR P. BOWEN.

In a paper in the January number of this journal I tried to show how great a difference there is in spirit between amateur and professional sport, and how much more important amateur sport is of the two. The view was expressed that every member of civilized society should early in life acquire an interest in active outdoor games and sports, and it was intimated that this is all the more important because of a great change that has recently taken place in the occupations and life of civilized man, having a marked effect on health and physique. It is the chief aim of this paper to show what this change has been, and what is its bearing upon the athletic problem.

When we make inquiry into the occupations and habits of life of our ancestors, we find that they have lived under conditions of civilization but a comparatively short time. There were civilized races living on the banks of the Nile and the Tigris a long time ago, but thirty centuries after that the historians of Greece and Rome wrote of our ancestors, who were still wild savages, living in caves and huts and tents in the then unbroken forests of Europe and Western Asia. Their food was the fish and wild game they could kill with the crudest of weapons; between different races and tribes there was perpetual hand-to-hand warfare. How long this and a still more primitive form of life had existed, no one can tell. The time since man first appeared on the globe must be estimated in thousands and perhaps hundreds of thousands of years.

During all these ages our ancestors lived a life of the most strenuous physical exertion. As far back as savage life in the temperate zone can be traced, the men hunted, fished and carried on war; women made the clothing and the shelter, prepared the food and made all the utensils needed in their work, besides caring for the children and the domestic animals. These two types of bodily exercise are quite different; that of the men was severe to the highest degree for a time, with periods of complete rest between; a type of exercise we now call *athletic*. That of the women was less severe but more steady and continuous; of the type of *manual labor*. As a result of these occupations both men and women were strong and vigorous; they lived and thrived in spite of unsanitary surroundings and exposure to all kinds of weather and hardship. These two types of bodily exercise, carried on so vigorously and for so many successive generations, no doubt did much to develop the two types of bodily form and proportions that men and women now inherit.

If we continue to study the occupations of our ancestors down to a later day, we find that they changed their habits of life a little from time to time, but until very lately they still led lives of bodily activity. The pioneers of the early colonies along the Atlantic coast, and even those who settled our own state in the early part of the last century were people of strong physique, many of them not a whit inferior in strength and endurance to the savages who lived here before them. One hundred years ago fully 95 per cent. of the population lived in the country, and the same was true of the Middle West 50 years ago. Men cleared the forests with the ax, broke up the soil, sowed and planted by hand, cut their grain with sickles and threshed it with flails. Women did all the household work, including dairy and laundry work, made all the clothing, and not far back they also made the cloth from which the clothing was made. Pioneer life called for muscular work and developed a sturdy race of people.

Since those days, almost within the memory of persons now living, a change has taken place in the occupations and habits of our people more sweeping and revolutionary as regards the development of bodily vigor than anything that ever happened before in the history of the race. The great feature of this change is the introduction of machinery to do the work that had always been done by muscle. Man invented the steam engine, the turbine wheel, and the gas engine to serve as means of tapping the reservoirs of energy in nature; and then the human body, that had done the work and borne the burdens of the world since time began, awoke one morning to find its occupation gone. Henceforth intelligence is not only to be supreme, as it has been in growing measure for centuries, but is to stand alone,—its former prime minister, muscular strength, reduced to the insignificant service of turning a switch to stop or start machinery.

The extent of this change in the industrial world is entirely beyond comprehension. The amount of power now being derived from steam, gas, and water in the United States, and used to do our work, is measured in millions of horse power. If we were deprived of its services, there are not enough adult male inhabitants on the earth today, if we could put them all at work in this country, to do what machinery is doing for us. By means of dynamos, copper wires, transformers, and motors, power is transmitted everywhere. Labor saving machinery, operated by this power, does a large and constantly increasing share in every field of industry. As a slight suggestion of its range we may mention the cotton gin, the spinning frame, the power loom, and the sewing machine in the making of clothing; the steamboat, the locomotive, the trolley car, the bicycle, and the automobile in transportation; the gang saw, the pile driver, the steam shovel, and the traveling crane in building; and the magazine rifle, the machine gun, the submarine boat, and the battle ship in war. And in the fields not yet fully covered the introduction of labor saving devices is as rapid as ever.

The introduction of machinery led to the specialization of occupations. In former times work was varied, giving to each individual not only a considerable amount of bodily exercise but at the same time distributing it to all parts of the body. Now all work runs in narrow lines. This is illustrated in factories, where each operator is given some small part to do, and he is expected to do this as rapidly and as accurately as possible day after day. In the transportation systems in the largest cities the same thing is seen. One man attends to the stoking machines that supply coal to a line of furnaces; another oils the engines and sees that they run smoothly; as you enter the station, one man sells you a ticket; another tells you what car to take; another watches you put your ticket in the box; another tells you when to get off; another turns the switch to stop and to start the car. None of this requires much more muscular force than teaching or preaching, and the work is specialized to even a higher degree than in the professions. Even in occupations where muscular work is demanded, the range of exercise is usually so small as to lead to deformity rather than to healthy development.

We still have a few occupations like farming for men and housework for women that afford a variety of good bodily exercise, but these occupations are shunned by the more intelligent classes, in spite of the fact that they pay well and are much less strenuous than they used to be. People flock to the occupations calling for shorter hours, less muscular exertion, and better clothing, leaving the work that is more healthful and invigorating to newly arrived foreign immigrants. The professions of law, medicine, engineering and teaching are crowded, and thousands go into commercial lines as stenographers, clerks, bookkeepers, traveling salesmen, agents, promoters and managers, where intense competition and bodily inactivity is the rule.

The modern industrial system has not only reduced the amount of muscular work to be done, giving shorter hours for labor and hence more leisure, but it has at the same time greatly increased production, giving all classes of workers more money to spend in pleasure than in former times. In the choice of amusements the American people show the same inclination to avoid muscular exertion that they show in their work. They spend millions of dollars yearly on books, magazines, newspapers and lectures; millions on festivals, concerts, parties, receptions and banquets; millions for exhibitions on the stage and on the ball field; millions for horses, carriages, autos, pleasure boats, and for rides on boats and trains; millions for decoration in dress, in the home, and in public buildings and grounds. Interest in active exercises and games centers in seeing others play them rather than in taking an active part in them.

Now the deliberate choice, under the circumstances, of amusements that do nothing for our physical development, is not what is to be expected of a people having the degree of intelligence that we pride ourselves upon possessing. When, a little while ago, the captains of industry consigned the human body to the scrap heap, along with the flail, the spinning wheel, the street car horse, and other discarded implements of a bygone age, it should have occurred to us, as students of evolution, that a body developed to its present type by ages of strenuous exertion might not thrive on idleness, and that intelligence, now all in all, might not thrive in this world without a fairly good body. Even if we had not reasoned so far, we have read history, and history tells us of many a nation that has conquered all its neighbors by strength of arms, and then has been vanquished and exterminated by the softened environment of a peaceful life. History tells us, in fact, that every people that has ever become civilized has degenerated and disappeared just as soon as the individuals revel in luxury and become feeble in body.

But it is not necessary now to foresee what must occur, for it is already happening in plain sight. We have already become a nation of weaklings. To quote from Drummond, "Whereas, once all men were athletes, now we have to pay to see one." By the time the average man of today is 35 years old, base ball and lawn tennis are too violent exercise for him; by the time he is 45, croquet and golf are rather severe. Not one woman in four hundred ever rises to the physical level of lawn tennis or base ball, and few after 25 are equal to golf or croquet. Hundreds of women are so completely deprived of muscular exercise that they never rise above the convalescent stage of health, with a buggy ride as the limit of endurance.

This is not from any inability to be strong. There are to be seen enough sturdy and vigorous Americans of both sexes to serve as examples of what we all might be. Our athletes, both amateur and professional, compare favorably with those of other countries and with those of former times, showing what the possibilities are. In the busy world we can find many such examples as Colonel and Mrs. Roosevelt,—people whose deliberate purposes has been to make themselves equal, by their own habits, of life to the duties of American citizenship.

The weakness and lack of development that inevitably follow a sedentary life cause in turn a weakness of the great vital functions of the body: circulation, respiration, digestion, nutrition and excretion. This weakens all the tissues of the body, making them less able to resist the attacks of disease germs. This is why grip, pneumonia, consumption and appendicitis are holding their own in spite of greatly improved sanitary conditions. Apoplexy and heart failure are on the increase because of common lack of development. Nervous diseases, such as chorea, melancholia, hysteria, nervous prostration and insanity are on the increase, and entirely new nervous diseases have recently made their appearance.

There is a marked decrease in the number of children in the families of the more intelligent and well-to-do people of today. The census reports show that American born women have on an average only half as many children as foreign born women now living here. Besides the greater number of American women who never marry, there is a large percentage of families with no children and a very high percentage with only one or two. The result is that in some sections the old pioneer families are dying out. This condition of things has been attributed by some to the greater intelligence and higher ideals of the people, and by others to narrow selfishness and the scramble for wealth and for frivolous pleasures. In the last analysis the true cause is probably to be found in the great decrease in the bodily vigor of American women. The bearing of normal, healthy children requires and probably always will require considerable bodily strength and endurance. It is not surprising that intelligent American women, realizing the extent of their own bodily weakness, hesitate to assume the duties of motherhood, with all the risks it involves.

To raise the standard of physique to where it ought to be, we must make good use of our recreations. Active games and plays, what I have referred to as amateur sports, must henceforth do for the human body what work has always done and what it will evidently not do in the future. This gives amateur sport a place among educational agencies much higher than people have been inclined to give it. If it has not this high value, then the educational and municipal authorities of New York, Chicago, Boston and other large cities are wasting great sums foolishly, for they have already spent millions in the establishment of playgrounds and in the promotion of amateur sports. Interest is centered upon interesting and occupying as many as possible of the children and youth in active exercises, both for educational and for hygienic purposes. The aims of the movement are educational rather than competitive. Equipment is provided in as wide a range as possible, including gymnastic apparatus, grounds and material for games, and wading and swimming pools. Prizes are offered, not for the few champions, but for every boy or girl who will reach a certain standard of physical ability. How different from the semi-professional standards of most of our schools and colleges!

Civilization is justly proud of its achievements in sanitation, through which cholera, yellow fever, smallpox, the bubonic plague,—the diseases that thrive in the midst of filth,—have been banished, and the manner of this achievement may well be imitated in the present case. By a campaign of education there was added to the moral and social code the principal that *uncleanness is crime;* and wherever this code prevails the once dreaded plagues are unknown. Now we must, by a similar campaign of education, add to the moral code that *bodily weakness is crime,* because it leads to the downfall of society as surely as either filth or fraud. And it must be added to the conventional code, too; for as long as a principle of conduct is merely a matter of morals many will shirk, but they all fall over themselves to get in line as soon as it becomes a matter of etiquette. Just as soon as amateur sport becomes the fashion, and anyone with a weak body is ostracised by good society, just as it now ostracises anyone with shabby clothes, the standard of national physique will begin to rise.

And since plays and games of the active and competitive sort are destined to play so large a part in the education of the race it is of the greatest importance that these things be kept clean. The aggressive commercial spirit of winning at all cost must be shunned as we would shun the smallpox, and for a similar reason. The source from which we are in constant danger of being contaminated with this germ of greed and littleness is professional athletics. Through exceptional abilities in the games, the professionals win the admiration of the younger players and of many older persons among the spectators; and this leads to a copying of their crookedness and lack of moral principle along with their good qualities. Nothing can be more destructive of the moral habits of a people than dishonest sport. As well turn loose burglars and cut-throats on the streets as men who deliberately cheat their opponents in a friendly game. The amazing frequency of graft, defaulting, cunning manipulation of stocks, and other similar forms of dishonesty in America today is, in my opinion, largely the results of the habits and moral principles acquired through the practice of the semi-professional athletics of our colleges and high schools. But if the spectators at the games, and especially the members of the faculties of the institutions, will be more loyal to their teams, supporting them and encouraging them when they are fairly defeated as well as when they win, and will at the same time show vigorous opposition to any signs of dishonest play, the evil can be kept down. If the faculties of educational institutions have one duty more plain than another, it is to see that the sports of the students are clean and wholesome, for the habits and principles of conduct there acquired often influence character far more than all the lessons of the class room.

THE RIGHT STANDARDS OF SCHOOL HYGIENE AND THE HINDRANCES TO MEETING THEM.

DEPARTMENT OF SUPERINTENDENCE, INDIANAPOLIS, INDIANA, March 3, 1910.

By Homer H. Seerley, State Teachers College, Cedar Falls, Iowa.

The Greatest Need of the Schools.—There is no modern problem that seems to be farther from solution than the providing and maintaining of proper physical conditions in the public schools. The practice of school hygiene is years behind the accepted theories, while real improvement does not seem to be seriously undertaken by those who control the situation. The great battle against contagious diseases, the large endeavors to suppress tuberculosis and the honest attempts to arouse public sentiment are all in vain until it is realized that children have rights that should not be ignored and that official acts should be classified as crimes against the welfare of society when such conditions are not removed and when healthful surroundings are not provided. Health, longevity, happiness, working power and prosperity are largely natural results that follow a respectable obedience to the laws of life, and at no time is this more necessary of observance than in the years of growth and development. The compulsory massing of large numbers of children into large single buildings for many hours of a day for many weeks in a year makes it particularly imperative that their needs be respected, their future welfare considered and their claims for a fair chance regarded. Prevention should receive more attention than cure. Tenable conditions should receive more consideration than temporary relief. Actual welfare should be prefered to economy.

The Standards that are Necessary.—Hygiene in the schools means a demand for immediate relief, not postponement for a generation; it signifies the providing of actual and necessary conditions without delay or without regard to cost, as the lives of the children involved are of more actual importance than all other things together; it implies that the first duty of officials is to serve their day and generation best by saving life, by extending capability, by developing notable physique and by guaranteeing genuine health—thus permitting a people to come upon the stage of activity who have the greatest opportunity for serviceable life that can be assured to mankind. These standards are—

1. *The securing of actual cleanliness in all public school buildings.* This means an abundant use of water and a large increase of work beyond the common practice. It does not mean the use of oils to suppress the possible floating in the air of dust and disease germs as this is not cleanliness at all. It does not mean that the janitor service problem is unable to be

solved because that is not a correct view: It does mean that enough workmen should be furnished to absolutely clean the buildings where the schools are maintained.

2. *The providing of pure air properly heated in sufficient quantity to give perfect ventilation.*

This is also a possible problem. Air is sufficient in quantity to meet the need, if it is brought into the school room by automatic mechanical means that are now well known and approved. No school district is so poor in resources, no treasury is so reduced, no school officials are so ignorant that it is necessary to deprive the children of the kind of air they need to breathe. Despite the progress of the past ten years, despite the marvelous inventions that have occured, this condition of hygiene is provided in a very small percentage of the public school buildings of the country and it is rare indeed that plans are being made to extend the privileges to all.

3. *The construction of buildings so that the proper quantity and quality of sunlight is guaranteed and thus protect the eyesight of the pupils from needless damage.*

This is at times nearly impossible because of the unfortunate location of the buildings. This is also due to the fact that it is easier to furnish electric light and thus use a mixed system than it is to provide right conditions. There is no remedy for unsatisfactory lighting of school houses improperly constructed other than condemning them as unfit for public use.

4. *The maintaining of an equable temperature through a mechanical regulation of the heating system.* Granted proper ventilation and this standard is necessary as an economic reason. It is extremely wasteful to continue the common system of window ventilation as it does not give protection to either comfort or necessity.

5. *The giving of abundant opportunity for healthful recreation and exercise so that the physical, mental and moral faculties of the pupils have the privilege of real training and development.*

The gymnasium and the playground are as essential as the school buildings, the teacher or the text book. Schools are not sufficient activities to train a life unless these modern instrumentalities are added and their work is given a proper place on the program. The physical director as an active agent and the acquirement of the power of enjoying recreation by individuals are both essential to the salvation and the well being of the people as a whole. The real cause of so much dissipation among the people is largely due to their lack of sufficient knowledge of how to have a good time and not take the customary form that leads to degradation and abnormal excitement. Play, outdoor sports, hygienic amusements are real substitutes for much that is classified as vice and crime and no cheaper method of fortifying against the evils that are destroying multitudes of the most promising people can be found than to teach the people the enjoyment of useful and helpful recreative amusements.

The Hindrances that exist.—Only a few of the more dominant hindrances can be here mentioned, but they are sufficient to enable others to be readily discovered:

1. *The People do not think these things are true.*—If they believed

the half of what is true about hygiene and sanitation they would rise in their strength and crush the authority of those who know better than they are doing and are apparently unwilling to give the opportunity for treatment that the truth demands. This is largely due to the fact that even those who teach these truths do not always practice them in their own living. The fact that the day of retribution is often postponed has much to do with this indifference to a much needed hygienic reform.

2. *The so-called well educated are too frequently ignorant of the causes that produce these unfavorable results and are, therefore, lacking in intelligence as leaders.*

There is nothing more detrimental to the progress of practical science than the lack of real intelligence among the educated. That this is absolutely true can easily be established by visiting the average college or university, the standard church auditorium or the common public hall. There is no place where all consideration of health is as flagrantly disregarded as is common in these public affairs. It is also worthy of mention as possibly true that the average college professor is so absolutely indifferent to such matters as practical hygiene demands since these are not among the matters of interest that seem to be of sufficient importance to deserve his scholarly attention.

3. *The so-called competent school officials are more regardful of architectural appearance and of the material used in construction than they are of the things that mean a chance for physical perfection or right physical development of the pupils.*

It is certainly true that many popular school officers and school superintendents are so seemingly indifferent or, if not so, they are actually incompetent to perform the duties assigned. There is no excuse in these days for such mistakes of common sense, for these failures to give heed to realities or for such monstrous conditions as are found in the majority of places. It is not necessary to surrender other essential things to get these and there is the basest negligence in every case where these things are not the first to be given attention and recognition.

4. *There are a great number of incapable, unadaptable, unteachable and helpless people who are in authority as both officers and teachers.*

These are, doubtless, doing the best they can with what they know. They do not comprehend the demands of science and they are usually too indolent to care to know more than to do just what has been done for a hundred years in the past. They like the old things, they admire the old forms of architecture, they adopt the old conceptions of the centuries and they think they should be complimented for their artistic taste or their notable judgment. Osborne Hall at Yale University is such an example of what a college building ought not to be and there are plenty of such memorial monstrosities erected for school purposes throughout the country.

The need for laws to compel Hygienic Conditions.

The solution of these problems are so necessary that it seems that some definite legislation ought to be undertaken by all the states that would make the continuance of these untoward conditions impossible.

1. Laws should define these standards, compel their enforcement and require modifications that will remedy the evils that exist. Any patron of the schools of this free country should be able to legally insist upon the members of the boards of education being required to provide for these

necessary conditions of health. Any child who is stricken with disease, because of public neglect of hygienic regulations, should be cared for at public expense and thus the penalty be imposed upon those who are responsible for the state of affairs.

2. Laws should make persistent neglect of these great principles a criminal offense on the part of officials. Sunlight, pure air, pure water and the physical conditions of life are naturally common property and should be provided without fail under all circumstances. Many of the most serious diseases with which the common people suffer are unnecessary and can be prevented by practice of hygiene. Outdoor life and outdoor games are absolutely essential to all and should be provided. The fact that even window glass does not admit the health rays of the spectrum makes it imperative that children be given outdoor exercise and outdoor recreation so that they may possess the health producing qualities that nature was intended to confer.

3. Laws should permit the condemning of school property that is unsuitably located, improperly erected or unwisely conducted so that the public must provide the necessary and the important means that health, success and happiness require. There is plenty of money in this great country to provide what is needed, there is plenty of knowledge that can be had for the asking, there are plenty of persons, who are intelligent and prudent, and are capable safely and wisely to serve the public welfare. Such a combination of influences and resources can give results far beyond what it now possessed. Such propositions are reasonable and fair-minded. To stop at less, to be satisfied with less, to believe in less does not accord with the demands of the times or the resourcefulness of American citizenship.

EXTENSION WORK IN PHYSICAL TRAINING IN PUBLIC ELEMENTARY SCHOOLS.*

By WILLIAM A. STECHER, Philadelphia.

Physical Training as a part of the regular work of the elementary schools is gradually winning its way into the school systems of all cities. Most large cities have had it for years. Examining the character of the work done and the time at present devoted to it in large as well as in small cities, one finds a comparative uniformity. As a rule from ten to fifteen minutes daily are officially set aside for physical training. A more or less elaborate Syllabus of Exercises is placed into the hands of the class teacher as a guide for the daily lessons. These lessons are changed every two to four weeks, when a special teacher of physical training visits the school and demonstrates the next lesson to the pupils and teachers. If these formal lessons are well learned, so that the pupils perform the exercises with vigor, the impression seems to prevail that the physical training of the pupils is in a satisfactory state, and that the children's need for exercise has been met. But has it?

Before a child leaves school it leads a comparatively free life. It is out of doors for hours at a time playing and developing. By the time it is two and a half years old it has completed one half of its full growth. When entering school at about six years of age its body, as a rule, is strong and sturdy, and the child has completed two thirds of its growth. As soon as it enters school there is a great change in its mode of living. School methods demand that its freedom be much restricted. For instruction purposes it must get accustomed to sitting quietly for a long time, some school systems demanding both a morning and an afternoon session for their youngest pupils. There can be no doubt that this long confinement with its seatwork lessons is detrimental to the normal activity of heart and lungs. This condition is intensified by the breathing of schoolroom air, which even with our most modern systems of ventilation is far from being as pure and beneficial as outdoor air. But the child which so far has had an unrestricted physical life needs more than protection against the unhygienic conditions spoken of. During its whole school life it needs a direct incentive for vigorous growth, for rapid molecular changes. Fifteen minutes of physical training in a schoolroom, in a gymnasium or in a yard will never accomplish this. Neither will a ten or fifteen minute recess.

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* Read at the convention of the American Physical Education Association, Indianapolis, March 4, 1910.

At this time of life nature has decreed that the young human being should enter its first period of accelerated growth. The result of this triple strain; i. e., of a forced growth in height, of decreased muscular activity and of increased mental activity can be foreseen. Statistics without number go to prove that at this age (about their second school year) children are attacked by all kinds of diseases. At no future time of their lives are they so liable to be sick. In speaking of this critical period Dr. Burgerstein in his work on School Hygiene says that schooling at this age ought to be limited to the most necessary studies, and that one session during the morning (no afternoon school session) must suffice.

Now, while many fall by the wayside, most children weather this period of stress and storm, although an increasing number are afflicted with anemia, spinal curvatures, round shoulders, and like ailments due to insufficient exercise and to decreased vitality.

Before leaving the elementary schools children pass through a second period of accelerated growth beginning, with boys, at about thirteen years of age, and with girls a little earlier. This again brings with it an increase of diseases. As a new feature the first great emotional disturbance peculiar to the pre-pubertal period now appear. This period of mental and physical disturbance and strain is much more violent than the first. Our great school systems do not, as yet, recognize even this second great strain upon their pupils in the least. If anything the amount of work and the number of school hours are increased instead of decreased. The result we see in a greatly increased number of pupils, especially of girls, suffering from diseases of all kinds, and also in an increase of withdrawals from school because the work of the school is not adapted to the needs of the child.

Now, what are we, as directors of physical education, doing to offset and correct this abuse. In some school systems we are satisfied with from ten to fifteen minutes of formal exercises in the school room augmented by from ten to twenty minutes of recess per day. In other cities athletic leagues help to increase the time devoted to physical training, but the methods employed by some make it questionable if the resulting harm is not greater than the good. So far as the mass of children from six to fourteen years of age is concerned little has been done beyond some promising beginnings in a few cities.

In order to know what measures are necessary to give our pupils the required amount of exercise we should know approximately how much, and, if possible, what type of exercise school children need. In trying to decide the amount we can arrive at no definite conclusion for we have no means of determining how much exercise a child needs. Judging, however, by the hours devoted by children to exercise of all kinds during the vacation periods, we can safely say that several hours per day must be given to physical exercise. Coming to the types of exercise the child needs, we have the guidance of that eminent searcher for truth in applied gymnastics, Dr. F. A. Schmidt. In his "Physiology of Exercise" he has laid down definite rules based on both theoretical and practical knowledge of the broadest character. Speaking of pupils in the elementary schools, i. e., of children from six to fifteen years of age, he demands exercise designed specifically to counteract the detrimental effects of sitting and stooping. Besides these there must be exercises for developing quickness, these preferably in the form of gymnastic games. All exercises should be taken outdoors, for as Schmidt says, "even the cleanest gymnasium will never be a substitute for the open air and sunlight." As the children grow stronger easy exercises upon apparatus and various forms of track and field work are to be added. Jumping and running must be given prominent places. Young children should have races up to 50 yards. 100 yards is a good distance for those of twelve years of age, and 150 yards may safely be undertaken by those from thirteen to fifteen years of age. During these latter years endurance runs up to twelve minutes, provided the pace is slow, may be indulged in, and all exercises of agility and quickness as typified by many forms of apparatus work should be included in all physical training work.

Examining the case before us we see on the one side that we officially have a few minutes of each of the five school days devoted to gymnastics. Then we have from ten to twenty minutes of recess per day, devoted as a rule, by the older boys to "horse play" of a rather objectionable character, to aimless standing about by the younger children, and to gossip by many of the older girls. The time before and after school is, as a rule spent in a like manner. On the other side we have the demand for hours of bodily exercise of a definite type in order that children may grow up strong in body and mind.

In some of the countries of Europe a solution of this problem has been attempted. Nowhere is less than two hours per week devoted to gymnastics. In most states it is three hours per week; i. e. thirty-six minutes per day. This time in some of the German states is augmented by one afternoon per week devoted to play. Attendance on the play field is obligatory for both pupils and teachers, and is counted as school work. This afternoon, in the discretion of the principals of the schools may be devoted to tramping, to swimming, skating, or other forms of physical exercise.

Let us look at the situation as it confronts us here in America. It will be a long time before we have one or two gymnasiums in each elementary school in our country. It will be a still longer time before the class teachers will know how to make the best use of a gymnasium. And even if we have succeeded in getting both gymnasiums and qualified teachers, this would by no means solve the problem if we could not also greatly increase the time for body training. All normal children need hours of physical exercise per day. The remedy then, obviously must lie in an extension of this part of our work beyond the limits placed around it either by ourselves or by school customs. First of all we must make better use of the recesses and also of the time the pupils spend about the schools before and after the regular session. Where the conditions are favorable the Saturdays and holidays must be used. This can be done without interfering in any way with the present school organization or by taking up more of the regular school time. If this extension is planned and directed wisely it will result in more than doubling the time at present devoted to physical training. All schools have yards. The few exceptions one finds in some of our large cities must not blind us to the fact that these are exceptions which should not have any influence in determining the principles which should apply to tens of thousands of other schools. It should be our endeavor first to have all school yards enlarged so as to give at least thirty square feet of play space for each child enrolled. Spaces devoted to decoration or garden purposes should not be included in these thirty square feet. If school boards are encouraged in the policy of gradually acquiring neighboring properties, wonders can be performed in a few years in transforming the surroundings of school houses to fit our needs. But we need not wait until the school yards are of the required size before beginning to transform them into "Turnplätze," i. e. outdoor gymnasiums and playgrounds. Guts Muths, Jahn and their followers, never knew anything of indoor gymnasiums. Gymnastics, which included all forms of track and field work, and all kinds of games was always performed outdoors. Closed halls were used only on rainy days. Even during the winter time physical exercises of a suitable character were indulged in outdoors whenever the weather permitted. For the pupils we have to deal with it would be a blessing to get them out of their stuffy, illy ventilated rooms several times daily during the winter months to let them play or run for a few minutes in the open air.

The changing of school yards into equipped outdoor gymnasiums or playgrounds, again, need not be done at once, for nowhere in America must a dollar go farther than in school work. If the director of physical training has the confidence of his superintendent and of the principals he will find several ways of gradually equipping a ground with apparatus of a type which may be used without much supervision. Where the ground will admit, places should be provided for practicing the different forms of track and field work. In planning for this extension work the point to be kept in mind is that such forms of physical exercise should be encouraged as may be practiced by the children without harm and without much supervision. So far as the finish of the ground is concerned it is wise to have a strip of cement of about twenty-five feet immediately adjoin the school house. The balance of the ground should be built up, using eighteen inches of cinders rolled down smoothly and putting over these a top dressing of several inches of finely crushed stone. Where the jumping pits are to be located twelve inches of cinders and about eight inches of sand will produce a good landing place. This same treatment will suffice under swinging rings and low horizontal bars. High horizontal bars, also parallel bars of any height are too dangerous for school yards.

Besides these means for the physical development of the pupils in the elementary schools, there is another notable aid which should be used whenever it is present in a city. This is the swimming bath. Everybody should know how to swim, and it is the duty of teachers of physical training to see to it that the pupils under their care learn this art. All pupils in a certain grade, say in the fourth or fifth school year, should receive instruction in dry-land swimming as part of their regular gymnastic work. Then they should be encouraged to go to swimming pools and put their acquired knowledge to a test. In some of the large cities private pools often offer excellent opportunities for learning. The point to be kept in view is that at a certain time of every child's life it should receive a powerful incentive to learn swimming. The longer it is put off the harder it is to learn. Swimming once learned is a strong incentive to the boy or girl to indulge in this admirable form of bodily exercise whenever the weather and the opportunity permit.

Further means for increasing the time devoted to the physical development of our pupils are the municipal playgrounds whose number is rapidly increasing in all cities. While an equipped school playground will suffice for many forms of activity for both young and old pupils it seldom has the area necessary for baseball; and baseball is a game every boy (and possibly every girl) should learn. For school boys it is perhaps the best game there is, giving them a great deal of exercise of the most beneficial character. It is, therefore, our duty to promote the formation of school teams which go to the neighboring playgrounds for their practice.

Other legitimate means to increase the time devoted to physical training are school exhibitions, school meets and field days, provided these are not made the object of physical training. By arranging programs embodying all phases of our work, and by giving prominence to those forms of exercise which will enable all the pupils of a class or of a school to enter, such functions can readily be made to yield physical benefits to all participants. Events in which only a few of the physically most developed of a class or of a school take part have little or no value as a means for influencing the physical development of the masses.

Finally, in order to give to all pupils something definite to strive for during out-of-school hours, wisely planned efficiency tests should be encouraged. Some forms of tests of this kind have already been established in several cities. These tests should encourage all-around physical efficiency. They should also be progressive. The first test should be for novices and consist of four events which boys and girls of fourteen years can accomplish after faithful practice. The emblem showing this accomplishment could be a bronze button for boys and a bronze pin for girls. The second test for juniors should consist of four or five additional events, including plain and fancy swimming, the accomplishment of which would secure for the person a silver button or pin. This second button or pin could be secured only by winners of the first. With many this second test would come after they left the elementary schools, and would have to be conducted by alumni or other school organizations. The final test for seniors should be based on the accomplishment of the preceding two, and should consist of at least five more events, including certain games, rounding out the whole into a broad scheme for securing all around development for the great masses of young men and women. Its accomplishment should be certified by a gold button or pin awarded by associations for the advancement of physical education.

☞ ASK FOR A SAMPLE COPY for you or for your friends.

PHYSICAL TRAINING IN THE PUBLIC SCHOOLS OF ST. LOUIS, MO.

Paper read at the Missouri State Teachers' Meeting, held in St. Louis, Dec. 28, 1909, by A. E. KINDERVATER.

SOME HISTORICAL FACTS.

Physical exercises have been a regular part of the daily program in our elementary schools since 1890. In September, 1898, regular periods for physical training for boys were first introduced at the "Central," at that time our only high school for white pupils, the girls of this school having received calisthenic work for some years previous to this.

The two instructors who first undertook this work here and carried it on under many trying conditions are still with us today and can look with deserved pride upon their success.

In 1891 Mr. Geo. Wittich was appointed by the Board of Education as supervisor of physical training and he, with a number of earnest and able assistants, prepared and laid the foundation for this work in our city.

Well selected and systematically arranged calisthenic exercises that would secure a uniform development of the child, and could be taken in the class room, were formed into lessons, graded according to pedagogical principles, and used for a *basis to start* the work.

The first manual in which one set of lessons is arranged for two school grades, was published by the Board of Education in 1892. The city was divided into seven districts and a special instructor employed for each. This special instructor visited each class in his district once in two weeks, demonstrated the new lesson with the pupils to the teacher and gave all desired information. The class teacher so informed and equipped with her manual, would repeat this lesson daily (all conditions being normal) for the ten minutes allowed for this work. As at that time this work was entirely new to most of the class teachers and special instruction after school hours was out of the question, the main source of success lay in the efficiency of the special instructor and in the good will of the class teacher. As both of these factors soon developed favorably and the pupils began to enjoy this beneficial diversion, the new work progressed very satisfactorily. The wide awake and progressive class teacher, who very soon found the various valuable points brought out by this work, if correctly applied, became an enthusiastic advocate and efficient instructor. With these advantages, a careful and efficient supervision, adding out and indoor games for the lower, wand and club exercises for the grammar grades, the work has progressed from year to year, keeping right in line with all the other studies and established its right to stay.

In 1904 the former manual was revised, games and contest exercises were added for grades three and four correctly classified and explained in print to the class teacher.

The schools grew rapidly, and as no increase in the teaching force could be made at that time, a re-arrangement to *three weekly* visits of the special instructor became necessary.

The work is reduced to thirteen lessons per school year and every third week is used for a review of the former lesson. This method has been in vogue up to the present time and with the majority of our class teachers, now well versed in this work, the results are very gratifying.

THE NEW ERA.

During the years 1903-1907 rapid strides forward are made in our line—two new high schools, the McKinley and Yeatman, a Teachers' College and three new district schools, the Shepard, Farragut and Sigel are built and fully equipped with gymnasiums for both sexes. Regular gymnastic exercises, including apparatus work, athletics and games, are now taken up by the grammar grade pupils in the above schools, with thirty minute periods twice weekly.

As the sexes are separated for these lessons, the work could be arranged to suit the character of each sex, thereby making it more appropriate and enjoyable to the pupils. As the pupils of two rooms take this lesson at the same time, one class teacher instructs the boys, the other the girls. A new lesson is demonstrated every third week by the special instructor, a man teaching the boys and a woman the girls. The lessons are prepared in detail in a separate hand book for the class teachers references and can be taught by command.

As gymnastic work was entirely new to most class teachers, some doubts arose as to its successful application, but through the clear demonstration by the special instructor of the lessons as prepared in the manual and the live interest manifested for it by the pupils, we find no difficulty wherever the class teachers can master the discipline. Physically efficient pupils are selected as leaders to demonstrate the work required, the teacher has only to command.

At present we have this kind of work in five of our new grammar schools, ten more of the new school buildings are provided with rooms for gymnasiums, but not yet equipped and four new buildings now under construction will have rooms for such gymnasiums.

It is my sincere hope that all of the above schools will be equipped in the very near future for genuine gymnastic work and with at least three periods of thirty minutes each per week, in order that so many more and eventually all pupils of our public schools may receive an all around physical training equal to their mental education.

Since the establishment of our Teachers College in 1905, a regular two years' course in physical training, with theoretical and practical work under a very efficient instructor is made obligatory to all students and the results have been most gratifying.

With teaching material thus carefully prepared, we may look to the future with satisfaction as to the physical welfare and education of the growing generation.

In January, 1908, an entirely new course of study in physical training, arranged in three parts, was introduced; the first part for the primary grades, the second part for thhe grammar grades in schools without gymnasiums and the third part for grammar grades in schools with gymnasiums. This work, based upon scientific principles, is original in its arrangement and consists of separate sets of lessons for each grade, supplementary work, games for the school yard and gymnastic lessons appropriate to each sex. The work for each grade is arranged in five themes and these themes correspond in all grades. Each theme carries three main directions—forward, sideward, backward.

A SYNOPSIS OF THE COURSE OF STUDY IN PHYSICAL TRAINING.

In the selection of the material and the arrangement of the same into lessons for our new course of study in physical training, the following principles were put down as a basis:

1.—Simplicity in movements.

2.—Development of all parts of the body.

3.—Application according to physiological laws.

4.—Progression with the mental ability of the child.

5.—Uniform and systematic arrangements of exercises, lessons and themes of lessons, in all grades, to simplify its teaching.

By simplicity in movements I mean, movements that are most natural and beneficial to the child, like raising and lowering, bending and straightening the limbs or body, skipping, hopping and running, suitable for execution in the class room, where other places are not available.

Every lesson in every grade contains exercises for head, trunk, arms and legs, and these are selected with a view to symmetrical development of the child's body.

The order in which the exercises succeed each other in the lessons is determined according to physiological rules for relieving quickly all congested parts of the body; for assisting the organic processes of circulation, digestion and respiration ,through vigorous activities of the different organs; for developing muscular strength, co-ordination, gracefulness, a correct posture of the body; and for counteracting, to a large extent, the evil effects of prolonged sitting and stooping.

The grading of the exercises is based upon pedagogical principles, and progresses from movements of one part of the body in one direction in the first grade, to movements of one part in two directions, in the second grade, the second movement following from a starting position, and movements of one part in two directions as four count sequences as well as movements of two parts in succession in the third grade; and in the fourth grade to movements of two parts of the body at one time in one and two directions, also to alternations and simple combinations of such movements in a fixed number of counts.

In grade five "Movements of one and two parts of the body" in one and more directions, and combinations of such, in four count sequences are applied. The wand is first introduced in this grade and free arm lessons alternate with wand-lessons.

The work for grade six calls for movements of two and three parts of the body, two of which to be in opposite directions, thereby increasing the difficulty in co-ordination, requiring more attention and control. The wand is used here as in the preceding grade.

In grade seven two and three, parts of the body, in same, opposite, and different directions, are worked as combinations and sequences. Indian club exercises are first introduced in this grade and alternate with wand lessons in schools where clubs can be used.

The work for grade eight differs from that of grade seven *only* in the addition of one more movement in each exercise, which means three movements in three different directions before the return to starting position.

Indian club exercises of a more advanced character alternate with wand work wherever school conditions permit.

Also here in the grammar grades marching for correct carriage of body and exercises to promote reaction and quick co-ordination are used as introductory work. Dancing steps, combining grace in co-ordination while in motion, causing much pleasure to the pupils, serve a dessert after the real hard work. Forced breathing, whenever out door air can be used to exercise the lungs, the respiratory muscles and quiet an excited circulation, closes each lesson.

As all lesson themes are alike in all grades, so are the exercises in these themes of the same character, developing from the very simple to the complex form. All the promoted pupil has to learn is the added progression in the higher grade which follows in natural sequences from one grade to the next.

That this systematic arrangement of the work greatly simplifies its teaching as well as its learning goes without saying. In the practical demonstration of the above work following this paper, the grades will follow each other in the given succession and these points will be brought out prominently.

The grammar school gymnastic work is arranged in separate sets of lessons for boys and girls, to suit the character of the sexes and graded for pupils of 5-6 and 7-8 grades, the two grades taking the same work. The lessons consist of the following work:

a. Running—simple and in figures.
b. Tactics—of the individual and the rank.
c. Calisthenics—wands and clubs.
d. Jumping—broad, high, hop, step and jump, (and jumping rope, the latter for girls.)
e. Apparatus—viz: Rings, poles, ladders, circle swing, horizontal bars, bucks and horses.
f. Games and contest work, graded to suit the age and sexes.

As we have only two periods of thirty minutes each per week, the above lesson must be divided and the exercises under "a," "b," "c," "d" are taken in the first and those under "a," "e," and "f" in the second period of the week.

In our demonstration of this work we will show you a complete lesson in condensed form.

The uniform and systematic arrangement of the material in groups and themes of exercises will show you, not only the physiological reasons and pedagogical aims, but also the practical side of making the work easy to teach and easy to learn.

Each lesson consists of seven exercises or groups of exercises, and the same type of movements will appear under the same number in all lessons and grades in the following order:

1.—Preparatory or attention exercises, aiming for quick reaction to a command, good control and carriage and strict discipline.

2.—*Leg work,* to relieve a possible congested condition of the blood in the brain, caused by mental work and renew the blood supply to these parts. Beginning with the fourth grade arm movements are combined with the leg work.

3.—*Arm exercises,* with a special view to the development and mobility of the muscles of the shoulder girdle, so essential in overcoming the round shoulder habit. Beginning with the fourth grade leg movements are combined.

4.—*Head exercises,* to develop the muscles of the neck and stimulate the blood flow toward the brain. Also combined with arm work.

5.—*Trunk exercises*, for the development of the larger muscle groups of the back, breast and abdomen, so essential for a correct carriage of the body and at the same time aiding and stimulating the process of digestion, secretion and respiration.

6.—Balance steps, for the training of those reflexes by which we control and co-ordinate the different part of the body in motion, thus securing grace of posture, good carriage, and with the execution of pleasing combinations in rhythm, great pleasure.

7.—Breathing, also combined with arm movements for the purpose of working all parts of the lungs, strengthening the respiratory muscles and quieting the rapid excited circulation. Exercise seven is taken only when outdoor air can be obtained.

The thirteen lessons which constitute one school year's work for each grade, are arranged in five themes, of which the first, second, third and fourth themes carry three and the fifth one lesson each. Every theme has its own type of exercises and every lesson of the theme its specified direction. This arrangement is carried through all grades of the work, viz: Theme, Raising and Lowering; Theme two, Bending, Straightening and Turning; Theme three, Raising, Carrying, Lowering (Carrying added in grade three); Theme four, Thrusting, Striding, Turning; and Theme five, Circling.

All themes consisting of three lessons are arranged in three main directions, viz:

Lesson one starts all movements in direction "forward," that being the most natural to the child.

In lesson two, all movements are started "sideward," and in lesson three "backward." The latter being the most difficult of the three, is taken up last.

Beginning with theme three, in grade one, "upward" is added, following out of the three main directions, forward, sideward, backward. Beginning with the second grade, movements in direction, "forward" and "backward" are taken up in all first and third lessons of each theme corresponding to those of lesson two, which work sideward right and left, thereby reaching the action of the major muscle groups of all parts of the body in the four main directions.

In addition to the daily indoor work, supplementary lessons for the school yard consisting of running for speed and endurance, games and plays, are provided and taken outdoors whenever the weather permits. The games and plays used, are classified and have been selected with a special view for training the senses of sight, hearing and touch and teaching accuracy of motion, discrimination, good judgment, confidence in personal strength and courage.

If time will permit we shall show you some of these games with upper grade classes, in the gymnasium this afternoon.

OUR WORK IN THE SPECIAL SCHOOLS.

Special attention and special work in physical training is given to the mentally and physically deficient pupils of our special schools. Wherever physical abnormalities are discovered, thorough examinations are made and work prescribed to relieve and possibly eliminate such conditions. Exercises and games to sharpen the sense organs, inducing quick reaction, and causing pleasure in doing them are being used successfully with such as are mentally slow. Outdoor gymnastics and athletics in moderate forms are in prospect for these pupils in the near future, and will no doubt aid materially in improving their physical and mental condition. The regular class teachers of these special schools are at present taking an extension course in special work for physical training which will be of great value to them in the education of those backward children.

HIGH SCHOOLS.

The present conditions for physical training in our high schools, as to space, equipment, efficient instructors, as well as the general interest in the work shown by the pupils, is better than ever before. From simple calisthenic work taken in the classroom, we have grown to a complete course in physical training in splendidly equipped gymnasia, bathing facilities and spacious athletic fields, connected with the schools. The required work is graded and arranged into a four years' course of two terms each and taken twice weekly in forty-minute periods. A regular lesson consists of: Running, Tactics, Freework, (including wands, clubs, dumbbells) and athletics, in the first period; and running, apparatus work and games in the second period of a week. The sexes are separated for this work, men teaching the boys and women the girls. Excuses from these lessons must be certified by a reputable physician.

In the Central and Soldan high schools which have swimming pools, separate time is set aside for plunging and swimming, which at present is voluntary. The work for the girls is of a similar type as that for the boys, but in a more modified form and is arranged to conform to their wants and needs. Aesthetic dancing and balance work partly takes the place of athletics. In the four high schools for white pupils, we have at present seven well equipped gymnasiums, four for boys and three for girls, and nine special instructors ,four men and five women.

In the McKinley and Yeatman, we have at present only one gymnasium and the two sexes have to alternate work in the gymnasium with work in the corridor and athletic field. In the Sumner High (colored), we have no gymnasium and the pupils take the regular calisthenic work. *Two normal classes* receiving special instruction in theory, practice teaching, history of physical training, physiology of exercise and hygiene. The new Sumner High School now under construction will open next year with two finely equipped gymnasiums, swimming pool, shower baths, and will have a special colored instructor for our work.

Besides the regular work in physical training, a number of other physical activities are taken up during the year by special groups of pupils, such as the track and field events in the spring, baseball in summer, football in the fall, and basketball in winter. All of our high schools belong to the Interscholastic League and compete with each other in the above events.

The girls in some of the high schools also have organized into basketball teams, Leaders Classes, and Gilbert Dancing Clubs, and are doing good work in these directions.

TEACHERS SPECIAL WORK IN PHYSICAL TRAINING.

Among a number of other studies, physical training has been taken up as extension work after school hours by a large number of our teachers at the Teachers College, some taking two and three courses. Besides this extension work, special courses in recreative physical activities, for teachers, with one lesson per week, are given at the four high schools, and are attended by over 200 enthusiastic members who not only greatly enjoy this diversion from their daily mental strain, but at the same time improve their physical condition and health. Four of our special instructors have for the last three years volunteered to do this work gratis for the benefit of our class teachers, and this service has been greatly appreciated by the Superintendents as well as by the teachers taking the work.

TEACHING STAFF IN THE DEPARTMENT OF PHYSICAL TRAINING.

At present there are eight men and seven women instructors and one male director engaged in this work. One at the Teachers College and its practice school, the Wyman, and nine at the high schools. All other public schools are divided into five geographical districts which are taken care of by four male and one female instructor.

PUBLIC DEMONSTRATIONS IN PHYSICAL TRAINING.

In closing this paper let me call to your mind the various mass demonstrations in physical training by pupils of the Public Schools of St. Louis and their missionary effect upon the public at large. In 1897 during a national festival of the North American Gymnastic Union held at the old fair grounds, 10,000 grammar school pupils lined up with military order and precision for a grand mass exhibition of calisthenics. To the strains of "Columbia, the Gem of the Ocean," witnessed by 40,000 people. Since that time we have had three repetitions of such mass exhibitions of regulated physical activities connected with the May festivals of our Teachers Annuity Association at the same place, the latter being combined with track and field athletics and games for both grammar and high school pupils, participated in by many hundreds, and witnessed by many thousands of parents, relatives and friends of the participants.

The practical demonstrations of the work in physical training by classes of all grades and high schools in our public school exhibit during the great St. Louis World's Fair will most likely be remembered by many of you. That these various public demonstrations of our work have been a great factor in showing its value and making it popular as a school discipline is a well established fact. Annual field days in which all physical activities practiced in our schools can be shown to the public, as educational work and clean sport, are contemplated for the near future, and I sincerely hope that our school authorities will lend a willing hand in their realization.

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—PLENTY of fresh air is a valuable adjunct in the management of feverish children. Placing the children in the open air for a few hours each day is advocated regardless of the age or the disease from which they may be suffering."—Dr. W. C. Hollopeter in Pediatrics, Jan. 1910.

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NOTES AND COMMENTS.

—A MOST ENCOURAGING SIGN of the increased interest which the playground movement is awakening among our well-to-do citizens comes from Philadelphia, where Mr. and Mrs. E. W. Clark have bought approximately five acres of land and are equipping the same with the intention of presenting this property to the Playgrounds Association of Philadelphia as soon as the field house and the apparatus are erected. The completed playground will represent the expenditure of $48,000.00 for land and $20,000.00 for equipment. A second instance in the same city is the offer of Dr. H. Woodward to give to the city a plot of ground for playground purposes if the city will convert an old reservoir, now unused, into a playground. Mayor Reyburn, an honorary Vice-President of the Playgrounds Association, has taken the necessary steps to have the gift accepted, so that by means of his gift Dr. Woodward has secured to the children two playgrounds.

—THE COMMISSION appointed about a year ago by the mayor of Philadelphia to study the playgrounds of other cities and report upon a comprehensive plan of playgrounds for Philadelphia will present its report to the mayor about May first. This will be a very valuable report covering the conditions found in the cities visited by the commission. Its recommendations and illustrations of what it considers model playgrounds for different sections of the city and suited to different sized plots will be of value to any city contemplating the establishment of playgrounds. Requests for copies may be sent to the Playground Commission, City Hall, Philadelphia.

—IN THESE DAYS when some over-zelous advocates of playgrounds seem to have the impression that with the installation of sufficient playgrounds all juvenile delinquencies will disappear, and that with the removal of adenoids and hyper-trophied tonsils etc. we will have no more dull pupils it is illuminating to read an article like Dr. Cornell's "The Influence of Nasal Obstructions" reprinted in this issue. Knowing Dr. Cornell to be one of the most untiring and faithful of the medical inspectors of the Philadelphia schools having the improvement of the conditions in the schools he visits foremost in view the results of his study tell us that more factors than one combine to make most of our backward pupils, and that besides the removal of obstructions good modes of living, eating, sleeping and exercise are needed. Only a combination of positive and preventive measures will help our backward children.

—THE PUBLIC SCHOOL PHYSICAL TRAINING SOCIETY is sending out the following circular to all teachers engaged in public school work:—

April 12, 1910.

To the Teachers of Physical Training in the United States:

The fifth convention of the Public School Physical Training Society of the United States was held at Indianapolis this year on March 2d, 3d, and 4th. It was undoubtedly the most successful and most largely attended convention in the history of the Society.

The following papers of unusual interest to physical training men and women were presented:

"The Principles underlying Modern Physical Education."
Herman H. Horn, Professor of Education, New York University.
"Physical Training as a Factor in School Life."
Joseph E. Raycroft, Professor of Physical Education, University of Chicago.
"German Gymnastics adapted to American High School Conditions."
A. E. Kindervater, Director of Physical Training, St. Louis, Mo.
"Extension work in Physical Training in the Elementary Public Schools."
William A. Stecher, Director of Physical Training, Philadelphia, Pa.
"The Methods applied to the Physical Training of Abnormal Children in the Public Schools of Milwaukee."
George Wittich, Director of Physical Training, Milwaukee, Wis.
"The Educative Value of the Child's Recreative Life and Systematic Provision for it."
George W. Ehler, Public Schools Athletic League, Baltimore, Md.
"Folk Dancing."
C. Ward Crampton, M. D., Director of Physical Training, New York City.

The Public School Physical Training Society will furnish to its members a volume of proceedings containing the above mentioned papers and it is the purpose of the Society to follow the same plan for all its future conventions.

To cover the cost of publishing these proceedings, it is necessary to obtain as many new members as possible. All teachers of physical education in any of its branches, and other persons interested in the promotion of physical training, hygiene, and sanitation in the public schools are eligible to membership. The membership fee is $1.00 and will include, as stated above, the volume of proceedings of the convention of 1910.

If you are interested in the work of this society, will you kindly send in your name and membership fee before May 20th, so as to insure the prompt delivery of the volume of proceedings? I enclose several application blanks of which I hope you will make immediate use.

Yours truly,
C. Ward Crampton, President.

Josephine Beiderhase, Sec'y-Treas.,
202 West 86th St., New York City.

THE INFLUENCE OF NASAL OBSTRUCTION UPON THE MENTAL DEVELOPMENT OF SCHOOL CHILDREN.

Walter S. Cornell, M. D., Bureau of Health, Philadelphia.

The association of retarded mental development with nasal obstruction may be demonstrated either by (1) a study of the physical condition of the dullards among the school popluation, or by (2) a study of the mental condition of those children suffering from nasal obstruction.

It may be remarked in this connection that in childhood nasal obstruction is almost always due to adenoids, and in a statistical study the two terms may be regarded as synonymous. Also that the writer's understanding of "mentally defective children" includes the dull children as well as those suffering from the more serious degrees of mental defect.

The prevalence of nasal obstruction among the dullards of the school population is evident from four studies in different schools at different times by the writer, three of which have already been published. They are here briefly recorded.

An exhaustive investigation of 44 school children of very low mentality, living in the poor foreign section of Philadelphia, showed 31 to be suffering from nasal obstruction. It should also be stated, however, that physical defects were numerous and diverse, since 12 cases of defective vision, 9 cases of discharging ears, 27 cases of poor nutrition, and 16 cases of nerve asthenia were also found, and the summary showed that but 3 of the children were free of some one or more of these 5 defects. Home visitation by the school nurses also showed that the environment in 9 cases was absolutely improper, and the family or personal medical history of 13 was sufficient to reasonably account for the mental defect existing.

Another investigation [1] in the Claghorn Grammar School of Philadelphia consisted in a comparison of the physical condition of the two brightest classes and the two dullest classes of the sixth and seventh grades. These classes had been purposely so made up by the principal, Mr. Dudley, for the sake of better teaching. In the two classes of bright children 12 per cent and 10.2 per cent, respectively, of the children suffered from nose and throat defects. In the two classes of dull children 28.1 per cent and 31 per cent, respectively, of the pupils suffered from these defects. It so happened in these classes that the eyesight standard averaged exactly the same in each class, so that this factor was fortunately eliminated.

Another investigation [2] of 174 dull children in four classes in the William McKinley Primary School (each class contained the lowest 25 per cent of the children of its scholastic grade in the school, while twelve other classes contained the brighter children) showed that nasal obstruction existed in 40 cases. There were also 68 eyestrain cases and 80 miscellaneous cases receiving parents' notices.

An investigation [2] was made of a special class for very defective, children organized in the Wharton School, Philadelphia, which showed that of the 22 members of the class, 14 suffered from nasal obstruction. It may be noted that 5 of the latter were complicated by discharging ears. There were also 11 cases of defective vision, 7 cases of poor nutrition, numerous miscellaneous physical defects, and almost all the children lived with poor foreign and almost illiterate parents.

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[1] "Backward Children in the Public Schools," F. A. Davis Company Philadelphia.

[2] "Mentally Defective Children in the Public Schools," The Psychological Clinic, Vol. II, No. 3.

The mentality of school children suffering from nasal obstruction may be estimated by their scholarship, expressed by "age per grade," or by the scholastic improvement ensuing subsequent to the removal of the nasal obstruction. So far as the writer is aware, these investigations heretofore have not been made and they are presented in this connection with the thought that they may be of considerable interest.

One hundred children whose adenoids had been removed by actual surgical operation after diagnosis by the writer and by other Philadelphia medical inspectors were investigated in March, 1909. The facts ascertained were, (1) the age and grade at the time of the operation, (2) the date of operation, (3) the mental improvement after the operation, according to the opinion of the teacher, and (4) the mental improvement after operation as shown by grade promotion.

The series was reduced to 70 because of inability to trace many of the children.

The average age of each grade is as follows:

Grade	1	2	3	4
	7.6 yrs.	9.7 yrs.	12.2 yrs.	12.7 yrs.

These "age-per-grade" figures may now be compared to the age-per-grade figures of the whole city of Philadelphia, taken from a report of the Superintendent of Schools, and also to the same figures for the foreign district of Philadelphia from which these cases were drawn. The Mount Vernon School, with a population of twelve hundred children of foreign parentage, is used for this latter comparison:

AGE PER GRADE (MONTH OF MARCH).

Age (average for the city of Philadelphia):

Grade	1	2	3	4	5
	7y. 7m.	9y.	10y. 3m.	11y. 2m.	12y. 1m.

Age (average for the foreign district):

Grade	1	2	3	4	5
	7y. 8m.	9y. 1m	10y.	10y. 11m.	12y. 3m.

Age (adenoid cases in the foreign district):

Grade	1	2	3	4	5
	7. yrs.	9.7 yrs.	12.2 yrs.	12.7 yrs.	

The retardation of the nasal obstruction cases is evident.

Mental improvement after operation.—This was ascertained by two methods: first, by an injury among the teachers, and, second, by an investigation of the promotion records. The reader will note that, owing to the impossibility of tracing all the children, the series studied below is further reduced to 63 cases.

The opinions of the teachers were conscientiously given, and since there were scarcely any instances in which more than one case existed in any one class room, the general opinion expressed is free of the charge of individual prejudice. According to the teachers the degree of improvement may be thus stated:

Much improved after operation	19
Improved after operation	25
Mental condition unchanged	16
Deteriorated after operation	1
Much deteriorated after operation	2
Total number investigated	63

This constitutes an encouraging report. In many instances, however, the "improvement" noted by the teachers must have been slight for the record of promotions subsequent to operations is distinctly less optimistic. It is here given:

CASES HAVING TWO OPPORTUNITIES FOR PROMOTION SINCE OPERATION (OPERATIONS JANUARY TO JUNE, 1908).

Promoted twice	4
Promoted once and failed once	21
Failed twice	10

CASES HAVING ONE OPPORTUNITY FOR PROMOTION SINCE OPERATION (OPERATIONS SEPTEMBER TO DECEMBER, 1908).

Promoted	7
Failed	20
Total number investigated	63

Such a record totaling 32 promotions and 52 failures after removal of the nasal obstruction certainly explodes the theory that the removal of adenoids is the panacea for all juvenile delinquencies. That it causes great improvement in some cases as well as a noticeable average improvement is the concensus of the teachers' opinions. It is well to bear in mind, also, that the frequently existing association of defective mentality and nasal obstruction does not signify in every case that the one is directly caused by the other, since nasal obstruction is found most frequently where poverty, poor nutrition, and poor ventilation exist, conditions which suffice in themselves to lower the mental standard of the child.

ECCE HOMO!

By Hans Ballin. Translated from the German by M. W.

He, who has followed the history of education during the last ten years, must have observed that much material of the old structure has, by necessity, been replaced by new. It would be deplorable were it otherwise, because the coming generations must be equipped differently for the battle of existence than were the generations in the past. Education is the armor man wears to protect himself in the fray to gain the position in which he hopes to find contentment and happiness.

Who fails to see the great changes that have taken place in one generation? Who could doubt that in the close business competition of today, a different preparation, than that of fifty years ago, is imperative? Apparently the whole social structure is turned topsy-turvy. For centuries man was governed by seemingly unalterable laws, without apparent change. All ideas and desires were deeply rooted and they obeyed such iron-clad laws of habit, that mighty and violent means were required to move them forward on the path of progress. It is different today. New ideas follow each other in quick succession, no reverence is felt for the antiquated, for tradition.. And as the new ideas crowd forward, man desires to put them into practice. Changes take place so rapidly that we have hardly time to adjust ourselves, and we feel that the new conditions themselves are not permanent,—that they carry the germs of future changes within them, changes which we expect, but cannot clearly foresee. Therefore the restlessness and fear in all we do.

But this evolution, perplexing as it may seem, destructive though it acts in the onward march of the race, its final goal is the higher development of mankind. In social life we may see the strongest contrasts,—the saddest proletariat and the most arrogant plutocracy, the greatest ignorance and the highest enlightenment, horrible perversion in crime and the noblest humanity,—out of this chaos mankind must eventually arise purified.

In this opposition of forces, in this conflict of good and evil, man must have one institution inviolable, whose existence causes all discouragement to vanish: the free public school. But it must be absolutely free, free from all political, social, and religious influences which seek their selfish ends, be it in a monarchy or in a republic.

When we have achieved this, then we may feel assured that the child, the coming man, will be so educated that he, notwithstanding the mighty changes which mark the present times, will be so harmoniously developed in body and mind that he is well equipped for this conflict in the battle for existence.

For in this desire of mankind to discard the old and pursue new ideals, the mind advanced with giant strides, careless whether the body could keep pace. All man's thoughts and desires, all his mental powers were bent upon reaching the highest pinnacles of knowledge, so that from the heights, he could seek the best means to get possession of the riches of the earth. He did not consider whether the body was strong enough to climb to the dizzy heights—he forced it to follow. But then the mind also sends the body into the depths below, into innumerable dangerous paths where god Mammon drives his slaves, that they bring from the shafts the glittering grains of gold.

We may enlarge upon this. Poets may transcribe it. But we need not imagine conditions, they are in reality all around us.. Who with seeing eyes will see, finds them in amazing numbers. Stand on the broad thoroughfare of one of our large cities and let the people surge by. It is not necessary that you have studied anatomy and physiology to be convinced that under the sole control and dominance of the mind, the body must have undergone untold agonies. These are not the human beings who can scale the heights of knowledge and long explore the depths of the earth. Now stand at the gate of a large factory and watch at closing time the workmen and working-girls pass by you. You will be convinced that the progeny of these people will not be capable of high mental achievement.

We must study these conditions to realize how desperate they are.

Because the greatness of workmen is the nucleus of a people. It is this mass which in a short space of time must take upon itself the responsibility in the destiny of mankind.

For the healthy body did not develop in the workshops, dominated by commercial greed—the healthy body developed in the open country, on the fields where the seed was sown, on the hills where the cattle were watched and on the waters where the sails were unfurled.. It was these workmen whose energy and thirst for knowledge set the mighty wheel of progress in motion into whose vortex they and their companions were drawn by the thousands, yes millions, till the fields are almost deserted, the hills nearly forsaken and fewer sails are on the water.

The temptations were too great for these mortals. They found that within half a century this evolution caused the value of property to increase, as it had not in the space of the eighteen hundred years preceding. And then it doubled in value within a quarter of a century and today even in a decade.

They did not suspect that this enormous increase would not remain in their hands, but that a few crafty ones would succeed in taking possession of it and they become merely laborers. Blinded by dazzling illusions, which they themselves created, they gave up the simple life of their former activity and saw and sought compensation in deceptive luxury. And they became its prey, body and mind,. so that today they cannot free themselves—unless they return from whence they came.

But that would be difficult. The weakened mind lives in an enervated body. The will power is lost. Luxury, which presses the crown of thorns deeper into the brow of the workingman of today, than the severest struggle for existence a hundred years ago, has made him a white slave without rights, without hope and without faith in himself—so he is today—ecce homo!

NEW HIGH SCHOOLS IN CINCINNATI.

Cincinnati is replacing two of her old high school buildings with new and modern structures. These buildings will be equipped with everything that a modern high school should have. Extensive laboratories for the sciences; manual training in all its branches; domestic science; commercial courses; large kitchen and dining room where lunches will be furnished for pupils and teachers; specially designed rooms for art instructions; and last but not least, each school has two gymnasia provided with locker rooms; shower baths and plunges, one for each sex. The contract for the gymnasium equipment of one school has been let and calls for $9,000 worth of apparatus.

The men who have been teaching both sexes heretofore, will, naturally, be retained, but will confine their activities to the boys gymnasium, so that two women will be needed to instruct the girls. The "Merit System" prevails in the appointment of teachers. All appointments are made from an "Eligible List" according to their standing. The following rules govern the appointment of teachers of physical training:

RULES GOVERNING THE APPOINTMENT OF TEACHERS OF PHYSICAL TRAINING IN THE HIGH SCHOOLS.

Candidates must be:

(a) Graduates of a recognized high school or its equivalent.

(b) Graduates of a recognized normal school of physical training, having at least a two years' course.

(c) Pass a satisfactory examination in Theory and Practice of Teaching.

(d) Pass a satisfactory examination in Physical Training.

Note:—Graduates of a one year's normal course, having at least three years' successful experience may be appointed.

Grading:—Applicants will be graded on the following basis:

For a two years' course in normal school 10 points.

For each additional year in normal school 2 points.

For attendance at summer schools of physical training ½ point per year.

Examination in Theory and Practice 5 points.

Examination in Physical Training up to 50 points.

Note:—Applicants who are graduates of a one year's normal course and have had three years' experience will be credited with 10 points and 1 point for each additional year of experience up to 4 points.

Examinations:—The examination in Theory and Practice will be the same as that for all teachers, conducted by the Superintendent of Schools. The examination in Physical Training will embrace:

(a) Anatomy—Physiology—Hygiene—

(b) History of Education—especially Physical Education.

(c) Method in teaching Physical Training.

(d) A demonstration of personal ability.

(e) A practical demonstration with a class. This examination is conducted by the Supervisor of Physical Training.

In Theory and Practice, 7 is the lowest passing mark.

In Physical Training an average of 9, in each of the five subjects, is required.

Salary:—

Male teachers, minimum, $1,500; annual increase $100 to $2,000.

Female teachers, minimum, $1,000; annual increase $100 to $1,800.

Credit will be given for successful experience and the minimum salary determined accordingly. Should it be necessary to appoint teachers who do not meet these requirements, the salary will start with $100 above that of the elementary schedule and increase at a rate not to exceed $100 per annum; the increase to be upon joint recommendations of the principal of the school and the supervisor of Physical Training.

The salary schedule will then be:

Male	$1000 to $1600.
Female	750 to 1150.

Note:—Appointees under this rule may remove the conditions by summer school and extension work.

Credentials:—High school, college and normal school diplomas and all grades received in the normal school must be filed in the original at time of making the application. Successful candidates must also secure a certificate of good health from a physician who will be recommended.

Examinations will be held during the week of June 6th, 1910.

Prospective candidates must register for the examination not later than May 15th. Send registration fee of 50 cents, together with full name and address to Wm. C. Ziegler, Clerk Board of Examiners, City Hall, Cincinnati, O.

For application blanks and other information address Dr. Carl Ziegler, Supervisor of Physical Training, City Hall, Cincinnati, O.

PLAY AND PLAYGROUNDS.

THE DAISIES.

In the great green park with the wooden palings—
The wooden palings so hard to climb—
There are fern and foxglove, primrose and violet,
And green things growing all the time;
And out in the open the daisies grow,
Pretty and proud in their proper places;
Millions of white-frilled daisy-faces,
Millions and millions—not one or two—
And they call to the bluebells down in the wood,
"Are you out—are you in? We have been so good
All the schooltime winter through;
But now it's playtime,
The gay time, the May time,

—E. Nesbit, in the Pall Mall Magazine.

OUTDOOR PLAY SESSIONS.

By LILIAN V. ROBINSON.

Three years ago the Boston School Board appointed a special committee of five physicians to look into the conditions affecting the physical welfare of children of the three grades of the public schools, and to suggest possible means for bettering their school life. It was the interesting and valuable report of this committee that suggested the "outdoor play sessions" carried on by the Hawthorne Club and South End Neighborhood House, Boston.

The children of the Way Street School-houses of primary grades come from as congested and dreary a quarter as the city contains. Way Street itself lies parallel to the Boston & Albany tracks, and the Atlantic Avenue Elevated crosses it close to the schoolhouse, so that the noise from each is an almost constant irritation to the ears of children, teachers, and occasional visitors. A slaughter house, with its unpleasant sights and odors, was opened a few doors from the school two years ago, but this the Hawthorne Club, with the aid of the head master, teachers, and representatives of other settlement houses, succeeded in closing last spring, after an agitation covering a year or more.

The Schoolhouse Commission, in answer to the Hawthorne Club's appeal some five years ago, made many improvements in the school building itself, but after all has been said, the situation is as bad as can well be imagined, and the building a sorry place for the school life of little children to whom the school ought to mean beauty, cleanliness, order, an uplifting influence in the midst of sordid surroundings. It was the situation and condition of the Way Street School which perhaps weighed most with the school committee in leading them to grant permission for the play sessions.

The children leave the school an hour before the close of the afternoon session, marching, with a teacher to lead and one as a rear guard, through the short streets which divide the school and the Hawthorne Club playground. Their shining, happy faces as they approach the door leading into the playground are a pleasant sight.

The playground, a vacant lot running the length and half the breadth of a city block—a reclaimed dumping ground loaned by its owners to the Hawthorne Club—was cleaned and put into good condition by the street department. Shrubs and vines were planted about its edges by the park department; swings, tilts, swinging ladders, drinking fountains, sandbox, and basket-ball equipment were supplied by private supscription.

Once in the playground the children divide themselves among swings, tilts, etc., and the littlest ones, in less time than one can tell, are building houses or digging ditches in the sand box. A young woman gymnast from Dr. Sargent's Training School is in charge, with the two public school teachers. During the first year of the play session the children were allowed to play as they pleased. Good discipline was maintained and there was little quarrelling, although seventy-five children from one schoolroom occupied the playground at one time. The teachers say that on play-session day absence from school is seldom known, and that the children look forward to it eagerly through the week.

The children are most careful not to injure shrubs and vines, and though they look longingly at blossoms of syringa or althea in the spring, only once was one picked. Now and then flowers are distributed among the children on leaving, and the Hawthorne Club members, children a little older than those of the Way Street School, have given the products of their roof garden to the school this autumn, filling eight or ten boxes with geraniums, wandering Jew, wax plants, etc., which they have "raised." One of the older club children, a girl of fourteen, who has just entered the high school, comes each play session as a volunteer assistant to help the children in their play, and has proved a very useful assistant.

It seems impossible that a play hour once a week can really mean a physical gain for the children, but their dull little faces have grown bright and animated, and the cleanliness which is insisted on for the playground has brought rosy cheeks and an appearance of better health at least.

The play session is but a part of a scheme of work connected with the school. A "school secretary" or "school visitor," under the direction of the teachers and the Hawthorne Club, goes into the homes of the children, looking up cases of tardiness or absence, finding out conditions under which the children live, making friends with the parents,—in short, doing what the overworked but devoted teachers would like to do had they time and strength.

Last year the school secretary did little but make friendly visits, gaining the confidence and liking of the mothers and smoothing out difficulties among tardy children, cooperating to some extent with the school nurse, such as taking children to the dispensary or hospital. This year a more definite plan is being worked out by the school secretary and her committee—

an attempt to do something towards solving the housing problem, perhaps the greatest problem of the congested quarters.

The committee aims to cooperate with the good landlord and good tenant and to combat the careless or bad landlord and tenant. The posting of the owner's name and address at the entrance of every tenement house is one thing for which the committee is striving. The school secretary, a person with special training in hygiene and sanitation, as she makes her visits, notes conditions in the home, not only those that can be bettered by the tenants, but those due to the careless landlord or to other tenants in the house who are objectionable. The school secretary then reports to her committee, they in turn calling other organizations to their aid and appealing to the city authorities as may seem wise.

With the coming of the warmer days last spring the Hawthorne Club endeavored to attack the dust nuisance, another great problem of the district, perhaps the greatest menace to the health of the people. A petition representing many prominent organizations was presented Mayor Hibbard asking that the streets of the congested quarters might be flushed through the summer months daily. The mayor responded at once, and as a result streets of the congested districts paved with brick, asphalt, or granite blocks in the South, North, and West Ends were flushed by the fire department between 6 and 10 P. M. daily, to the great relief and pleasure of the people. It is hoped that another year the plan may be more fully worked out, and as a matter of fact an investigation of flushing machines used in other cities is now being made by the superintendent of streets, with the thought of perfecting plans in Boston another summer.

For the children this year—and it is through the children that we can hope to accomplish most—a delightful game has been invented called "play hygiene."

The rules of good hygiene are being taught by means of this game in the playground, and later, when cold weather compels the gymnast to carry on the play sessions in tht school room, the game will still serve its purpose.—*School Hygiene.*

—IN JANUARY last Dr. Victor Pimmer of Vienna, Austria, made a speech at the ministerial inquiry about physical education, in which a strong plea was made for the preservation of open lots and the use of squares and parks for playgrounds and out-door gymnasiums. Dr. Pimmer said vacant lots must not be permitted to be used for building purposes as they are needed for the good of future generations. His speech included the following remarks: "Gymnastic apparatus such as parallel bars, horizontal bars, horizontal ladders and round-swings (giant-strides) should be placed in the smaller parks and squares, even if they belong to private corporations, in accordance with the example set by London and Philadelphia, at any time affording the children of the people opportunity to practice bodily exercises, such chances becoming less daily in our large cities."

NORMAL COLLEGE OF THE N. A. G. U., INDIANAPOLIS, IND.

—At the last conference meeting, Mr. McComb, of the English department, gave an interesting talk on "Games and sports in the

Public Schools of England". Mr. McComb spent several months visiting the English Schools, consequently his talk was very interesting.

The class debated on the following: "Resolved—That individual competition shall take the place of class competition at the National Turnfest of the North American Gymnastic Union.

The weather being ideal, the men of the class laid out the Turner Park for field and track work. It is well adapted for the work and much pleasure has been gotten out of the out-door work.

Hazel C. Orr, Sec.

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About the Use of Safety Appliancss for Learning Difficult Exercises.

Translated by Carl O. Hierholzer, Military Institute Bordentown, N. J.

Orders for and questions concerning hand-straps and other so-called safety appliances designed to protect the gymnast in undertaking difficult exercises are often received by me. Viewed entirely from the standpoint of the business man, unconcerned as to whether the article demanded fills its purpose or not, it is easy enough to supply such articles, irrespective of whether the possessor has acquired something useful or not, so long as the transaction is made.

But I do not wish to view the matter from the standpoint of the business man and, therefore, advise against the use of these things. It is mostly from among the younger gymnasts that the demand and orders for such apparatus come; those who lack sufficient courage, strength and skill to perform this or that exercise and who fondly imagine that there is something advantageous in the use of these appliances.

It, therefore, appears that a word as to the danger and uselessness of these so-called safety appliances would be fitting. Let us imagine a gymnast, one who lacks the necessary physical development, fastened by hand-straps to the horizontal bar and ready to attempt the giant swing. He secures, we will say, by a throw from the front rest, the well known swing and fortunately succeeds in arriving at a hand-stand. Here, however, his strength leaves him, he lets go or slips off, and the free falling body exerts an unavoidable jerk on the wrists or arms. The consequences are incalculable and instead of preventing an accident the safety appliance is the cause of one. An earnest warning against the use of such helps is the only thing, therefore, that can truthfully be given.

As a practical gymnast I would give the following advice to those who believe that they need such helps:—Strengthen yourself by regular work on all the apparatus until you have learned to control your body in all the simpler exercises and have worked into your nervous system the knack of these, then, so to speak, the more difficult exercises come of themselves. In addition, he who cannot lift his own weight and control a hand-stand had better not attempt the giant-swing. The learning of such exercises through the help of any kind of safety appliances is undesirable and should not be tolerated by any instructor or class leader. (Oswald Faber, manufacturer of Gymnasium apparatus, Leipzig.)

CIRCULAR

Relating to the Mass-Exercises for the Field Day of the Public Schools of Philadelphia, Pa., on Saturday, May 21, 1910.

Belmont Plateau, Fairmount Park.

Music: "In the Arena" March, by H. Engelman; published by Theo. Presser Co., Philadelphia, Pa. The march is written in 4-4 time. Two counts are taken for each measure. When taking the exercises count up to 16, and then repeat. The "Introduction" to the march has 4 measures. There are five parts in the march of 32 measures each; the fourth part (in the form of an interlude) is skipped.

There are two groups of exercises. For each group the complete march (excepting the interlude) is played. After the first group of exercises has been performed there will be an intermission of 16 drum-beats. Then the whole march will again be played for the second group.

The exercises in parts 3 and 4 of each group are tactics (marching exercises), part 4 being exactly like part 3, except that the following words will be sung while marching:

FIELD DAY SCHOOL SONG.

With heads erect and flashing eyes
  We march upon the field,
With hearts so true, with courage bold,
  We fear not, nor shall yield.

Our sports and games, our races, too,
  Are more to us than play,
They give us health, and strength, and grace,
  Lead us the honest way.

Principals will please have the above words copied on the blackboard of the rooms that will participate in the field day, so that the children may learn them.

INTRODUCTION—4 measures (8 counts), all stand in position.

GROUP I.

PART 1.—32 measures—64 counts.

MEASURE.
A. 1-2. Raise the arms sideward (counts 1-4).
3-4. Raise the arms upward (counts 5-8).
5-6. Lower the arms forward (counts 9-12).
7-8. Lower the arms (counts 13-16).
B. 9-16. Repeat the exercises of A twice, giving two counts to each movement (counts 1-16).
C. 17-18. Raise the arms forward (1-4).
19-20. Raise the arms upward (5-8).
21-22. Lower the arms sideward (9-12).
23-24. Lower the arms (13-16).

D. 25-32. Repeat the exercises of C twice, giving two counts to each movement, (1-16).

PART 2.—32 measures—64 counts.

The arm movements of Part 1 are repeated with striding.

A. 1-2. Raise the arms sideward and stride left sideward (1-4).
3-4. Raise the arms upward and replace the left foot (5-8).
5-6. Lower the arms forward and stride left forward (9-12).
7-8. Lower the arms and replace the left foot (13-15).

B. Repeat the exercises of A, giving two counts to each movement (1-16).

C. 1-2. Raise the arms forward and stride right forward (1-4).
3-4. Raise the arms upward and replace the right foot (5-8).
5-6. Lower the arms sideward and stride right sideward (9-12).
7-8. Lower the arms and replace the left foot (13-16).

D. Repeat the exercises of C twice, giving two counts to each movement (1-16).

PART 3.—32 measures—64 counts.

Marching in a cross.

A. 1-2. In four steps face to the left (1-4).
3-4. Four steps forward (5-8).
5-6. In four steps face left about (3-12).
7-8. Four steps forward (13-16).

B, C and D are exactly like A. Each part takes 16 counts and consists of marching on one part of the cross.

NOTE.—The interlude as written in the march is not played.

PART 4.—32 measures—64 counts.

The air is exactly like Part 3. The same marching movements are performed as in Part 3, with the addition of singing the words of the Field Day Song.

Interlude of 16 drum-beats. Get into line in case the alignment has been lost. On count 9 bend arms for thrust. The music is now repeated without the Introduction.

GROUP II.

PART 1.—32 measures—64 counts.

A. 1-2. Lunge left sideward (counts 1-4).
3-4. Thrust upward (counts 5-8).
7-8. Bend the arms (counts 9-12).
7-8. Replace the left foot (counts 13-16).

B. Repeat the exercises of A twice, giving two counts to each movement (1-16).

C. 1-2. Lunge right forward (1-4).
3-4. Thrust upward (5-8).
5-6. Bend the arms (9-12).
7-8. Replace the right foot (13-16).

D. Repeat the exercises of C twice, giving two counts to each movement (1-16).

PART 2.—32 measures—64 counts.

A. 1-2. Lunge left sideward (1-4).
3-4. Bend the trunk left and thrust right upward (5-8).
5-6. Straighten the trunk and bend the right arm (9-12).
7-8. Replace the left foot (13-16).

B. Repeat the exercises of A twice, giving two counts to each movement (1-16).
C. 1-2. Lunge right forward (1-4).
3-4. Bend the trunk forward and thrust downward (5-8).
5-6. Straighten the trunk and bend the arms (9-12).
7-8. Replace the right foot (13-16).
D. Repeat the exercises of C twice, giving two counts to each movement (1-16). The arms are lowered on the last count.

PART 3.—32 measures—64 counts.

Marching in a square.

A. 1-2. In four steps face to the left (1-4).
3-4. Four steps forward (5-8).
5-6. In four steps face to the left (9-12).
7-8. Four steps forward (13-16).
B. 9-16. Repeat A (1-16).
C. 1-2. In four steps face to the right (1-4).
3-4. Four steps forward (5-8).
5-6. In four steps face to the right (9-12).
7-8. Four steps forward (13-16).
D. 9-16. Repeat C (1-16).

PART 4.—32 measures—64 counts.

This is exactly like Part 3, with the addition of the song.

EXTRACTS FROM MEDICAL JOURNALS AND PHYSIOLOGIC AND HYGIENIC NOTES OF INTEREST.

By D. M. FERD. KROGH, M. D., Philadelphia.

—NOTHING is more health-giving than a cold morning bath if indulged in by those whose reaction is good. The cold or tepid sponge bath, taken in the morning before breakfast, with friction to make the skin red, is one of the most health-giving actions we know of. It promotes healthy circulation to the skin and all the organs of our body, and keeps them in a good condition and healthy in appearance. Some persons cannot indulge in a "morning tub" by reason of some peculiarity of their constitution, or from liver affections, and are unable to take the bath quite cold. It should, in this case, have just the chill taken off, but the skin should, in all instances, immediately after the bath, he thoroughly dried and rubbed with a coarse towel. The brain is invigorated from the healthful stimulation of the nerves. If the person is not very strong, and the reaction is not perfect, a glass of hot water, taken after the bath, will prevent a chill.—London "Health."

—WE OUGHT to be well satisfied if in the near future the government establishes a *bureau* of health. It would surely be followed by a *department* in time, as has been the case with both the old bureau of agriculture and the bureau of labor. The hopes of the profession will yet be fully realized and the recommendation of the President in his recent message will lead to the speedy inauguration of that which, though only a partial step in the direction toward which those hopes point, should be gratefully and joyfully accepted by the profession.—"Med. Review of Reviews."

—SIX HUNDRED THOUSAND human lives are needlessly sacrificed in the United States every year. Three millions are constantly seriously ill in the United States, more than one-half of these illnesses being preventable. Vicious personal habits and overwork are the chief factors in bringing about this appalling state of affairs. Intemperate living and the strenuous life, and not so much general causes and communicable diseases, are keeping up the death-rate. Preventive medicine has done valiant service in reducing the potentiality of the latter as operating causes. In other words, all our efforts have been confined "to protecting men from diseases which others might give them, and permitting them to die in middle life and old age of diseases which they may unknowingly give themselves."

Mr. Rittenhouse, of the Provident Savings Life Assurance Society, urges as a remedy that the state inaugurate a systematic and permanent campaign of education for the prevention of diseases of all kinds by the distribution of health bulletins, the liberal use of health and medical inspectors and by other methods. He also suggests that the state provide free medical examinations, periodically, for any who may desire them, for the purpose of detecting disease in time to check and cure it. His plan would enlarge the work of health departments and would require an increased staff of inspectors and medical examiners.

The enormous loss to business interests entailed by existing conditions, not to speak of the burdens that sickness and death bring upon the laboring man and his family, should convince such business interests and organized labor of the necessity for action of some sort. Such efforts as Mr. Rittenhouse proposes would be well within the bounds of reason and would be amply justified by the results.—J. A. M. A., Jan. 22, 1910.—Med. Review of Reviews, Feb., 1910.

—MENTAL WORK is not a simple matter of mental energy, of quantity of positive or inhibitory nervous discharges, but of this direction as well; mental fatigue is not like physical fatigue and requires different treatment; its warning signs are more complicated, less efficacious, and therefore more often neglected; the warnings that we do have are not measures of the degree of inability but indefinite and at present ill-understood signs of danger; the degree of mental inability does not vary proportionately to the amount of work done without sufficient rest, but increases much less quickly up to a certain amount of mental work, and then may increase much faster, so that one straw of mental work may then break the camel's back.—London "Health."

—WHEN the entire moral energy of an individual goes into the cultivation of personal integrity, we all know how unlovely the result may become; the character is upright, of course, but too coated over with the result of its own endeavor to be attractive. In the effort towards a higher morality in our social relations, we must demand that the individual shall be willing to lose the sense of personal achievement, and shall be content to realize his activity only in connection with the activity of the many.—Jane Addams.

—EVEN cases of insanity have developed from fright in the young. The telling of ghost stories to children will make such an impression on their sensitive minds that they will most likely dream about them, and wake up in a fright, with all the horrors of "night screaming" added, and will not be pacified. Serious brain and nervous disorders have resulted from this cause alone.

The "night screaming" in children is largely due to this cause. Many children have also been seriously frightened by shutting them up in a dark room as a punishment or by threatening them with the doctor—as some thoughtless parents do—who, they are told, will cut off their ears if they are not good children.

—WHILE some of the brethren of the cloth have been busy popularizing and even practicing the psychic treatment of nervous disorders, others have been as busy to even better purpose in the propagation of the health crusade by very practical sermons and journalistic articles toward the furtherance of bodily welfare. It is truly refreshing and inspiring to have from the representatives of that organization which so lately taught the doctrine of asceticism, at least tacitly, such excellent aid in the direction of bodily reverence and care. Asceticism was never preached by the founder of Christianity, and in this day when the more vital truths of that teacher are coming to the surface, the doctrine that the body should be neglected is sinking into medieval night. A sound body is needed to carry out the present interpretation of the Nazarene's teaching,—that our business is to be and do in this present hour, and not, by penance and spiritual contemplation, to feather our bed in a world to come. Indeed, it is now becoming apparent, as Herbert Spencer wrote, that "All breaches of the laws of health are physical sins," and even the church is echoing the words of the great agnostic.

As example of this health-preaching, Lyman Abbott devotes five columns of his excellent journal to an article on food and feeding that is well worth the study of the layman, and Dr. Buckley, of the *Christian Advocate,* who, in his characteristic vigorous manner, spit fire in the eyes of the Emmanuelites, has been running a series of editorials on the subject of exercise which would be worthy of a professional worker in physical training. The articles by Dr. Buckley are the more interesting that they are based on experiment with the various health developers of which he writes.—The Dietetic and Hygienic Gazette.

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

—SPRING football practice at the big universities, smaller institutions, and at Annapolis has already provoked a great deal of gossip with relation to the six new rules promulgated by the Intercollegiate Football Rules Committee on March 26, with attention now riveted on tackling.

Particular stress is laid on three of them as having almost a revolutionary effect, these being the abolition of the flying tackle, the regulation that members of the attacking eleven may not use their hands or arms on teammates to pull, push, or keep them on their feet, and the provision regarding kicks traveling at least twenty yards across the line of scrimmage before the kicking side may be put onside unless the ball has been handled by a member of the opposing team.

At every institution in the United States where football has been played the one big exhortation of the coaches has always been for tacklers to leave their feet at the moment of tackling. This advice has been based as much on the rule of safety as for any tactical reason, for it is obvious that in any collision between two moving men the one who has gathered the greater momentum will usually be less injured and will feel the shock of contact the less.

As tackles go, it is very seldom that a flying tackle has been made except when players were approaching each other at an acute angle. Certainly the pursuer of the man with the ball would, in a stern chase, be foolish to leave the ground in a long-distance attempt to catch the fleeting one, for any man can ordinarily travel faster on his feet than he can through the air propelled only by his legs.

Therefore, tackles from the rear have commonly seen the tackler within three or four feet of the object of his pursuit before he launched himself. Yet even this method of tackling, safe to both tackler and tackled, is banned under the new rule, for by no stretch of the imagination can a flying tackle be defined as other than that in which both of the tackler's feet are off the ground at the moment of impact.

Head-on tackles are seldom of the long-distance diving variety, for usually the easiest man in the world for a runner to dodge is he who, from a non-moving and erect position, has left his feet and driven himself head first directly at the runner from in front.

So it is that at the big universities where they have been experimenting with the new rules they have found that on the two occasions when lengthy diving tackles are imperative—when the ends are down the field under kicks and when the ends or defensive half backs are running towards the side lines on a diagonal to the man with the ball—they must fall back on mere concussion, as it were, a bringing together of two bodies without the tackler leaving his feet. And with what result?

At one New England institution there is already a casualty list caused by the tackler having to get his man without leaving his feet cleanly. Instead of doing as of yore, the tackler has now to get close up to his man and then drive the blow home by body-checking, with a subsequent use of arms to stop the runner's leg movement.

That is to say, as the defensive end, for instance, sends his man out toward the side lines on an attempt to turn the end, it has been found that he must get within close range, taking the risk of a stiff-arm, heeled blow on the jaw, and put his head and shoulders into the runner's body, then circling the runner's legs for the tackle. Inasmuch as the tackler may not leave his feet what else can he do? is the wail of the coaches. And so at that university tackler and tackled are helping to make an altogether out-of-season hospital list.

At Harvard, Yale, Cornell, Tufts, and Annapolis almost all the scrimmage practice which has thus far been held has shown that the defensive quarter back and the full back dropped some fifteen yards in the rear of his line are quite sufficient to defend against the new form of onside kick, provided that the present forward pass across the line of scrimmage is abandoned and the defensive half backs thus brought back to their old position on support of the tackles.

At Yale much work has been done under the three provisions of Group A, confining the forward pass to back of the attacking line of scrimmage, a defense which is not allowed to spread out wider than the offense, and fifteen yards to go in three tries. It has been found that, under a combination of the first two of these three suuggestions, end running has been made more profitable than mass plays at the tackles and guards, with a great premium placed on strategy.

By shooting plays out toward the ends, thus calling the defensive end and half back out, a short forward pass has enabled the full back or quarter to dart quickly through the line or around the tackle on the other side of the line. But coincident with this conclusion has come the discovery that the defensive ends and half backs are indeed in a bad way to stop attacks at the flanks, because they are not allowed to tackle cleanly, but must approach the runner so closely as to body check him first and tackle afterward.

Moreover, it has been found that the injuries subsequent to the new tackle are far more apt to be really serious than under the old rule. The diving tackle looks like a very rough play for all concerned, but, on the whole, the runner is accustomed to the shock of impact and takes care of himself. He goes down hard, to be sure, but seldom with serious results. It is usually what has happened after the tackle that has made cripples.

The twisting of legs and backs, the wrenching knees and ankles, these have come after the actual diving tackle was completed. There have been few injuries to the upper part of the torso under the old rule. But it is reported from three big institutions that chest and stomach injuries are now the rule rather than the exception following every one of the tackles under the new rule, with an increase of twisted ankles and knees, in which the tackler is as often injured as the tackled.

One illustration of just what the new tackle has eloquently told the coaches is perhaps best shown by reverting to an injury of last season. Everybody who saw Lilley go down under the attack of three Harvard tacklers will remember for many a day how he was smothered under an attack every part of which was body checking and none diving tackling, all high and none low. Analyzed down to a fine point, the attack on Lillely was that of weight against weight.

The practice this spring has proved that, under the new rule, players, when tackling, will have to depend more upon their own weight and strength than on accurate, well-timed tackles. And it has proved, too, that it is now very questionable whether, unless the system of tackling that has always prevailed is left as it was, there will not be a far bigger injury list next fall than in previous years, almost all of it due to the new tackling.

It was hinted at more than one college club last week that the Intercollegiate Football Rules Committee would, as a result of present spring practice, be asked to rescind its newest ruling on tackling and restore the diving tackle to its former station. Then, with the interference kept from being too compact by another of the new rules, defensive ends and tackles will have individuals to cope with and serious injury will be less frequent than ever before.

For the fifth succeeding year Mr. Jay Gould emphasized his claim to rank as the master amateur tennis exponent of the world by defeating Joshua Crane, of Boston, on the court of the Racquet and Tennis Club in this city. The young Columbia student, who played from the Racquet and Tennis Club, of Philadelphia, defeated the Boston champion three straight sets by 6-2, 6-3, 6-1.

—In the Universalist Church of Our Father, Grand avenue and Lefferts place, Brooklyn, is a stained glass window, a memorial to the late Henry C. Chadwick, widely known as 'the Father of Baseball." It was unveiled recently with appropriate services, a eulogy being pronounced upon the life of the man and his uplifting influence on the great national game.

The window is a replica of Holman Hunt's painting, "The Light of the World," and at the bottom is inscribed:—In memory of Henry C. Chadwick, Father of Baseball, by his friends."

The Rev. Thomas E. Potterton pronounced the eulogy on the life of Mr. Chadwick, speaking in glowing terms of his unselfish devotion in bringing a great game up to a high, clean basis.

In the front pew was seated Mr. Charles Ebbetts, president of the Brooklyn Baseball Club, who was in charge of the memorial fund and who collected the fund from men in the National and American Leagues. With him sat Mrs. Chadwick, the ninety-one-year-old widow and two of her daughters, Mrs. Thomas Eldridge, of Sag Harbor, and Mrs. William G. Edwards, of Brooklyn.

BOOK REVIEW.

—Mr. W. P. Bowen, M. S., Professor of Physical Education, Michigan, State Normal College, Ypsilanti, Michigan, recently issued another volume of interest to teachers, principally of teachers of gymnastics and those doing playground work. The book is entitled *"The Teaching of Gymnastic Games."* The first three chapters treat of "the growth of the play movement in American education;" "the meaning and value of play;" and "how age and sex influence play;" and are well written, while the remaining ten chapters contain a description of games progressively classified from the most easy and simple to the more difficult and complex forms. The volume is bound in pasteboard and contains 134 pages. It sells at 75 cents, (mailing price 85 cents), and may be had from Mind & Body, Herold Building, Milwaukee, Wis.—Dr. Kr.

—"THE BODY AT WORK" the fourth volume of the Gulick Hygiene series is, like the other books, strongly to be recommended. The point of the book is to show how to train one's body to do the most efficient work. Emphasis is laid on function rather than on structure. Quite a number of illustrations are taken from Dr. Schmidt's "Unser Koerper." The mailing price of the book, which is of the same size as the preceding volumes, is 55 cents. Published by Ginn & Company, Boston. To be had from Mind and Body, Herold Bldg., Milwaukee.

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HEREDITY AND ENVIRONMENT.

By JOHN W. WAINWRIGHT, M.D., New York.

The phenomenon of heredity and the results of environment are so closely interwoven that it is difficult to declare where one begins and the other ceases. Heredity is defined as the transmission from the parent to the offspring of general and acquired traits and qualities; or, the tendency which exists in every animal or plant in all essential characteristics to resemble its parent and thus to be of the same species. Heredity is, therefore, intrinsic.

Environment is whatever encompasses or surrounds; external circumstances and conditions and, therefore, extrinsic. Environment tends to shape the mental and physical characteristics and these, in turn, may be and often are transmitted to the offspring, thus assuming the nature of heredity traits. Compensation, in this connection, may be termed the sum of benefits arising from an adaptation to environment.

General traits are those that come from remote ancestry as well as from other causative factors such as environment, inter-marriage, anatomical and physiological abnormal traits of the progenitors. In fact, man is the product of the eons of past ages. Whatever of good or bad, refinement or viciousness that exists in the individual existed in his ancestors. Man, in other words, is the composite of all that has gone before him. His environment may determine his traits or characteristics and these be accentuated or subdued in his progeny, but he will bear in his mental and physical make-up the unmistakable impress of the evolution through and to all past living creatures, including simian, reptilian and piscian. The defective represents interrupted progress in the evolution of man as we find him today at his best; while natural selection and the survival of the fittest have made it possible for progress. It took many generations to accomplish the conditions as we find them today and then only through the natural destruction of the defective or unfit. Climate, the elements, the ability to procure sustenance, and to maintain oneself amidst his natural enemies, sociological and other factors in his environment had to be met and adjusted to his benefit. Only the strong survived and through transmission of their characteristics to the offspring, through heredity, could progress be made. The weak or defective fell, became extinct, while such as were fitted to make their way through the multitude of obstacles, survived.

There are four general methods of inheritance of qualities or traits:

First: The qualities of the parents may blend in the offspring. This is illustrated in stature and in skin color; the progeny of the white father and the black mother being neither white nor black but what is termed mulatto.

Second: The quality may be inherited from one parent wholly. This has been termed alterative heritage and is illustrated in the color of eye and hair, the offspring having the color, both of eye and hair, or of either eye or hair, of one parent.

Third: In one part of the body the quality may be exactly like that of one parent; in another part exactly that of the other parent. This is known as particulate inheritance and is markedly noticeable in animals such as the horse, dog and other mammals. In the horse one parent may be black, the other white and the issue gray, or dappled, or one bay and the other white and the offspring the so-called "calico" or white and red spotted.

Fourth: Reversion. This is inheritance from a remote ancestor or, perhaps, more truly speaking, the absence of typical immediate inheritance. Reversion is illustrated in the mixing of two races of varying characteristics, the offspring having traits and characteristics resembling neither parent, but like the ancestral. Numerous illustrations familiar to the physician might be cited to illustrate reversion, mental and physical characteristics being especially in evidence.

Fifth: We may have qualities strongly marked in both parents transmitted in a very marked degree to the offspring. This is known as the law of cumulative or convergent inheritance.

Sixth: Inherited qualities will appear in the offspring at the same age as when they manifested themselves in the parent—law of homochronous heredity—or if intensified by cumulative heredity they may appear at a younger age.

Seventh: Morbid or abnormal conditions or diseases which are hereditarily transmitted may produce in the offspring similar conditions—similar morbid heredity, or dissimilar conditions having nevertheless a strong affinity to the parental condition—heredity by transformation.

It has been shown that not only when the cell has divided twice, but four times, and even sixteen times, the separate cells if dissociated from the group can pursue a separate existence and become well developed organisms of the parent type, thus showing the persistence of heredity.

As elsewhere indicated, man's mental and physical organization has been developed through untold generations and is the resultant of hereditary culture and physical development transmitted by all of his ancestors. Every cell in man's body is so differentiated from others that each performs a special function and life work with the same precision and response to hereditary tendency as does the individual. These cells act in response to stimulation from the nerve centers. So long as these nerve centers are normal, the action of the cells will be normal, but if the nerve centers are modified or rendered abnormal through disease or otherwise, there will result hereditary abnormal tendencies and the offspring will partake of the abnormalities.

General heredity is characterized by repetitions of the physical, mental and moral peculiarities of the ancestors; for instance, children will sometimes so closely resemble one or other of their parents as to be at once recognized through the strong resemblance. In certain families special tendencies such as complexion, stature and weight become habitual and as they appear at certain times in life conclusions may be forecast. Again, certain families tend to long life, to twins, to certain habits, religions, business or professional tendencies, to music, the stage, to genius or mediocrity and to moral or criminal tendencies. These latter psychological traits—normal or abnormal—are more unerring in their appearance than the physical, and are forcibly illustrated in families of soldiers, advocates, musicians, statesmen, financiers and business men of history. The Jew has ever been shrewd in trade, the Indian in cunning.

Prenatal influences, or direct causes for individual variations, are the *a priori* factors which exert the elective influences in transmitting hereditary traits or characteristics invariably determining the offspring's individuality, or in other words, hereditary characteristics tend to be transmitted; acquired characteristics or traits to modify these same traits. Prenatal influences tend to further modify and make permanent these characteristics in the offspring. If the prenatal influences are indifferent or not strongly marked, they interfere less with the transmission of general hereditary tendencies. If, on the other hand, these same influences are strongly marked, the tendency is to accentuate characteristics of the ancestors. Prenatal influences are unquestionably very important factors in individual. characteristics, and this influence is very largely dependent upon the physical and mental conditions of the father and mother at the period of conception; especially is this true of the mother's physical, mental and moral condition at this period, and upon her environment during the early months of pregnancy, the constructive functions of the cells responding to maternal influences in these early months. We thus see the necessity for mental balance, agreeable surroundings and physical health of the mother. Too much stress cannot be laid upon these conditions at such times.

When a child is conceived during the period of inebriation of father or mother there must be a tendency to alcoholic indulgence in the offspring. If there is a lack of affection; if either parent is, at the time, mentally occupied in planning the execution of a crime; if during the stress of poverty, hunger or other depressing conditions of mind, the child is likely, at least, to be influenced and show like or similar tendencies.

On the other hand like tends to produce like; hatred, hatred; violence, violence; dishonesty, dishonesty; love, love; strength, strength mental and physical. Environment plays a very important role in the individual tendencies, indeed it is a question whether environment does not more materially influence the characteristics or traits of the individual than does heredity. Heredity traits can be influenced through environment, or so modified as to be unrecognizable.

Occasionally a child is born and grows to manhood amidst the most vicious environments, but inheriting a character so strong, so inherently good, that he rises above his environment and develops into a most useful and exemplary citizen. A child may thus become unlike the parent by training or through environment.

Ordinarily, however, the child of the slums, reared amidst squalor, with vicious associates and surroundings may be expected to develop traits similar to those of his companions whom he naturally seeks to emulate. A stunted body and mind will develop a diseased body and mind. Until sociological conditions can be made to approach the ideal we must not expect to find always the ideal citizen nor should the unfortunate be always condemned, but rather their environment should be improved. Disease and crime can be largely controlled through well directed and earnestly applied means, and thus through environment, will unfavorable heredity be so modified as to lose much of its curse. Then and then only will humanity receive the compensation which is its due.

Opinions have changed within recent years as to the hereditary transmission of disease. But a few years since the opinion prevailed that most diseases were hereditary, notably tuberculosis. Authorities have since denied the communicability of tuberculosis. Today we know that this disease is contagious, and that while it is not directly transmitted, a predisposition to acquire it is inherited, and that the descendants of tuberculous parents or ancestors are more prone to contract the disease than those whose ancestors were free from it. There is an immunity, however, to disease in the children of those who have been thus affected, else, how account for some members of a family being free from a disease strongly marked in the parents, such, for instance, as tuberculosis, insanity, chorea.

Social environment is responsible not alone for physical deterioration in the individual but for dormant mental characteristics such as vices, crimes, neuroses, insanities, idiocies, and the various fads and love of mysticism. But as elsewhere stated man is not simply the creature of his environment, but the product of bygone ages. He may be influenced by his environment which may determine one or numerous dormant characteristics, but nevertheless he is the sum of his ancestors. With the impress of civilization there follows greater mental and physical exhaustion and this in time is followed by hysteria, melancholy, neurasthenia, the use of stimulants and a desire for excitement. These, accentuated, presage crime, insanity, the loss of will power or lack of ability to concentrate one's thoughts, and these in turn are transmitted to the offspring, and thus we account for the fact established by statistics that 50 per cent of all criminals are born criminals.

It is said that one in every 300 in England, and one in 500 in the United States becomes insane. Heredity and the strain of environment are responsible for this state of affairs. An unstable nervous condition resulting from sociological factors will develop into alcoholism, speculation, fast living, to be followed in the succeeding generation by various psychoses, such as neurasthenia, hysteria with an occasional degenerate or genius; and this again by more pronounced degeneracy, epilepsy and brain deterioration and again by idiocy, feeble mindedness and finally the cycle is made complete by sterility and annihilation, and thus spontaneous cure. Thus nature comes to the rescue and wipes from the face of the earth the undesirable and allows the world to progress.

This picture is not overdrawn, but does not always follow in the sequence detailed, for certain traits may be obliterated and spontaneous cure follow, and this is effected through the laws of heredity and environment; but these same traits may also lie dormant to become again in evidence in future generations.

Precocious children may show an aptitude or even a genius for certain callings not observed in the parent, but the tendency can be traced to some past generation or it be shown that the parent has those qualities or traits undeveloped.

Moral diseases, like physical diseases, are contagious, epidemic and hereditary. The sons of vicious and corrupt men reproduce the very nature of their parents.

If the offspring come from ancestors well endowed mentally and well formed physically, he will possess these characteristics of organization and be equipped for the combat of life and prepared to pursue his way by his own virtues and energies. On the other hand, if he spring from a stock already marked with the stigmata of hereditary blemish, he comes into life with a badly balanced organization and inherited defects latent and ready to develop when some cause, accidental or otherwise, arises to start them into activity.

If the immediate ancestry be defective or the maternal environment during fetal life be poor, the atavistic tendency to a remote type will develop at the expense of advance unless parried by the favorable influences of changed or improved environment. Upon the mother depends to a great extent the preservation of the type and of accidental variations introduced by the male.

Immediate heredity, may be malign or otherwise as environment shall determine. As above stated, the mother is the great factor in heredity, as a healthy mother may offset the paternal defects of a generation. Maternal environment involves the question of maternal impressions. Profound shock, destitution, want of food, etc., act upon the mother and may deleteriously influence the fetus, for not only does poverty produce anemia and malnutrition of the fetus, but profound shock disturbs the bodily metabolism. A more delicate molecular transmission during maturation of the ovum, during its fertilization, or during the embryonic stages of the more complex and, therefore, more readily disturbed and distorted human germ, will account for the disastrous effect of insanity or other mental and physical disturbances in the offspring. Epileptic children may result from the effect paternal inebriety has upon maternal health and environment.

Herbert Spencer has shown that with the increase in growth and specialization there follows a decrease in the explosive manifestations in early biologic history, in the function of reproduction which is common to all cells. With advance in evolution, the functions of cells become specialized and the extent of reproductive power is decreased. This specialization, Spencer designates individuation. In degeneracy the organism returns to the lower type and consequently tends to a reversion of individuation. From this cause results the plural and frequently repeated births in the degenerate. The occurrence of large families, therefore, is not an expression of advance but of degeneracy.

The absence of deep emotional feeling enables the defective or certain individuals or organisms to weather the storms of stress, and thus they pass through life like a cork through the disturbed waters, while those of the higher type, having a lack of brute force are crowded into those pursuits where there is less storm and where the finer senses receive the least amount of friction and shock.—Dietetic and Hygienic Gazette.

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THE EVOLUTIONS OF ATHLETIC EVILS.

Third Paper by Wilbur P. Bowen, Professor of Physical Education,
State Normal College, Ypsilanti, Michigan.

The growth of student athletics has been very rapid for twenty years. From small beginnings in a few eastern universities the movement has not only grown to enormous proportions where it started, but it has spread to nearly all the colleges and high schools in the country. This rapid growth has brought about some serious athletic problems that have compelled the attention of teachers, and for several years past the educational press has brought out many able discussions of these problems. As a result of the chance afforded to study the growth and development of various phases of athletic life and custom, and the illumination given in these discussions, we can now see clearly some things that were formerly rather hazy and of doubtful significance.

One notable change within the last few years has been the gradual falling away of active opposition to athletics as a part of education. It is practically admitted by everybody nowadays that the athletic games and sports have come to stay, and that there is a good reason for their staying. The general public is just beginning to recognize for the first time that the occupations of everyday life in the future, and especially with the more intelligent classes, will not afford enough bodily exercise and training to maintain the physique of the race. Leading educators are seeing for the first time that something like athletic training is necessary to the highest mental development. Physicians are urging as never before the universal practice of bodily exercises as one great means of health, instead of relying solely on the taking of medicine. So strong has this sentiment become in all directions that there no longer exists any practical opposition to the general advisability of athletic sports.

Along with the growing recognition of the hygienic and educational value of athletic practice has come the realization that high school and college sports, as now carried on, do not even remotely approach the accomplishment of what they can do along these lines. They are apparently conducted for the benefit of the few who least need such training, rather than for the good of the mass of students; their main purpose seems to be spectacular, rather than hygienic and educational; they frequently lead to various forms of dishonesty and brutality, and to all degrees of excess. How can we account for such an amazing inconsistency? What motive can there be strong enough to induce a college or a high school, purporting to stand for all that is highest and best in Christian civilization, to secretly hire trained athletes to play on its teams? What advantage can there be in such an institution's making a false showing in athletics? Why should our educational institutions, the county over, sacrifice the best interests of 90 per cent of their students in order to promote a series of shows given by their few best athletes?

A brief study of the evolution of American college athletics and athletic customs clears the mystery and shows exactly how such misuse of athletics has arisen. A century ago, when the foundations of our educational system were being laid, American life called for no special means to secure bodily training. Fully 95 per cent of the population lived in the country. Pioneer life in the midst of a new country had developed a hardy race. In the past of the race the work necessary to secure the necessities of life had always provided all the bodily development that was necessary. No one in those days ever dreamed of the complete revolution that the invention of machinery has since wrought in the occupations and life habits of the American people. Those who attended the colleges and academies of those days went there, in most instances, from the active outdoor life of the farm, and looked forward to a life of considerable bodily activity afterwards. The educational system was moulded to meet the needs of these people as they saw them. In a sparsely settled country, with very limited opportunities for reading and for social intercourse, and with a democratic form of government, education was planned to give students a liberal culture, a more scholarly and polite use of the mother tongue, and the opportunity to acquire useful knowledge, especially along lines pertaining to industry and politics. When, as time went on, college men began to take up athletic sports, no one thought of them as having any serious importance, either educationally or otherwise. Since they were considered simply as forms of amusement which certain persons chose to follow, it was naturally expected that those who took part in them should pay whatever it cost to carry them on. Even after they assumed great proportions, and after it began to be seen that they had great educational value, still the college authorities everywhere adhered to the tradition that the colleges were intended to provide intellectual culture only, and considered it entirely outside the province of a school or college to provide the funds to carry on athletic work.

As the attention given to athletics increased, the need of money to provide the maintenance of the sports increased along with it. The students interested in the sports, failing to secure from the funds of the institution any allowance for their maintenance, saw that the existence of any such training depended upon their putting on the market a kind and quality of sport that would pay. Working along this line they soon found that financial support depended upon their putting out a winning team. They found that the average individual likes to be on the winning side of everything, and that while people have a moderate desire to see games and contests, they have an immensely greater interest in the team or the man who can beat all competitors. They found that the average community will give liberal support to a team that can win all its games, but that it will not give much financial or moral support to a team that loses.

As soon as the promoters of athletics clearly grasped this principle, they at once set about making athletics pay. The old idea of athletics for health and for discipline was discarded; that of athletics for revenue took its place. What had been sport now became business; what had been friendly competition became war. "The team" existed but for one purpose: to defeat and humiliate the teams of rival institutions; only in that way could it swell the gate receipts. The mass of students, lacking unusual physical ability, merited consideration only in so far as they would aid in the enterprise by paying the admission fee and "rooting" for the team. With a zeal and shrewdness seldom surpassed in the world of finance, many a genius of the college world has invented schemes that have been used in every college and high school. Professional coaches have been employed; famous athletes from the alumni have been brought back to help the coach whip the team into fighting trim; students, coaches, and alumni have been set at the work of inducing promising athletes to come to the institution; athletes have been enticed and even hired to leave rival institutions and play against their old associates; newspapers have been induced to give large space and attention to the games and to individual players of certain institutions; players have been given extra inducements in the form of expensive uniforms and equipment for the sport, free board at the "training table," long and frequent railroad trips, and an amount of hero worship seldom equalled in the days of chivalry.

The system has worked well for what it was intended. The success of athletics as a commercial venture has been phenomenal, even in this commercial age. Single games sometimes bring in gate receipts amounting to more than a thousand dollars apiece for all the men on both of the competing teams. Several of the largest student associations spend more than $100,000 annually for the expenses of teams. Several have an equipment, paid for by earnings and by gifts of loyal alumni, approaching half a million dollars. The athletics of smaller institutions have also met with prosperity on a smaller scale.

The financial success of student athletics has given them a standing and prestige with the general public that they could not have gained in the same time in any other way. Business men appreciate financial success, and are apt to measure success in dollars and cents. As a consequence, many who looked upon athletics a few years ago as a piece of student foolishness are now enthusiastic supporters of the games. College men, formerly held in little esteem in the commercial world, won the respect of the public when they demonstrated that they were able to make money. Coming to have an interest in athletics in this way, the general public naturally thinks of the matter as a financial proposition and accepts the commercial idea of athletics as the correct one.

A great many people, both students and citizens, viewing the matter from this standpoint, have little patience with the disposition of faculty committees to frame rules of eligibility and to discourage the custom of offering inducements to good athletes. What harm is there, they ask, in hiring good men, if by so doing you can pay them and realize a profit? That is good business. If a college may hire a good teacher in all propriety, why not a good athlete? No one ever demands that a doctor be an amateur, then why a ball player? Why should a college faculty discriminate against its own teams by requiring all the players to keep up in their studies to the same standard as those students who have no athletic work to do? What sense is there in hampering a system that works so well by a lot of rules and restrictions that have nothing to do with the case?

As long as the commercial basis of the present system is accepted as the correct one by the college authorities, there is no answer to these questions. The trouble with student athletics is not on the surface, but in the principles on which the system is founded. Athletics promoted, as most student athletics are today, chiefly in the interest of their earning capacity, are essentially professional. What matters it whether the proceeds go to benefit the system as a whole or the players individually? The distinction is a mere matter of words. The whole train of athletic evils against which the faculty committees and the intercollegiate boards have been battling are the natural and inevitable results of the false principles on which the system rests. As long as we expect the athletics to support themselves, we must expect the managers to play to draw a crowd; since this depends on winning,

winning will be considered the thing of supreme importance; as long as athletics are carried on between teams and before crowds who look at it from this standpoint, the temptations to dishonesty, brutality, and excess will be too great for many to withstand. As long as the purpose of athletics is commercial, the spirit will not rise above the spirit of the stock exchange, no matter what rules the faculty committee try to enforce. Efforts to reform have met with only partial and temporary success, because they have been mainly attempts to remove certain evils while retaining the system and the spirit from which they inevitably spring.

In the great schools for boys in England and in a few schools and colleges in this country the institution has furnished room and equipment for athletic sports, and has provided for the organization and practice of such sports irrespective of physical ability. In these institutions the percentage of students engaging in some form of bodily training is two or three times as great as in those that are most famous for their athletics, the sports are more uniformly beneficial to the participants, and the evils are much less evident. In a few institutions the fund is raised by a subscription or voluntary assessment paid by the members of the school, no admission fees being charged at the games. This is a great improvement over the usual system, as shown by the greater numbers benefited and the general spirit of the student body. The students of such institutions have a healthy interest in taking part in real sport, rather than in taking it all by proxy, and they are more apt to be loyal to the team at all times, whether it wins or not. The man in a paid seat in the bleacher is not the best exponent of college spirit; he has paid for the satisfaction of seeing his side win, and he wants his money's worth; he is gleeful and noisy as long as his team is ahead and gaining, but subsides into sullen and silent gloom when it is losing. This is a cheap brand of loyalty, but it is the kind that has been developed by the system.

The school and college authorities who wish athletic reform can get it at any time when they are ready to provide the funds; then they can dictate the method of expenditure and the system will be free from the commercial spirit and the moral and educational evils that go along with it. Some fear that to divorce commercialism from sport will take away all vim, but the instinctive desire to excel, possessed by every normal individual, is a sufficient incentive to make everyone anxious to win. This is natural and right, and gives to all plays and games the zest that makes them so great a force in education; the influence is bad when the desire to win is exaggerated out of all reason by making financial support and the existence of the sports depend upon winning.

It is not surprising that coaches, students, and citizens should see in athletics a commercial instead of an educational problem; they are not students of education, and they have been driven to their point of view by the failure of faculties, principals, and governing boards to provide the funds for this branch of education as they provide for all others. It is surprising that the leaders of education in America, those who dictate or advise the apportionment of funds among all branches of education, should have for two decades failed to grasp the educational value of this work and have left it to go off on a tangent; it is still more surprising that the teachers, the great band of wide-awake and progressive people who handle the educational destinies of the nation, should have but yesterday passed by the golden opportunity of a lifetime and permitted the playground associations, made up chiefly of outsiders, to inaugurate the greatest educational movement of modern times. There is hope that in a time not too far in the future the high schools, colleges, and universities will learn from observation of the playgrounds what games and sports are for. Of all things, let us hope that the playgrounds will not be commercialized.

THE EVOLUTION OF THE LATEST SWIMMING STROKES.

L. B. HANDLEY.

Writers on swimming topics are almost unanimous in looking upon the crawl stroke as a typical one, whose characteristics are so distinctive as to class it by itself. This is an error. The crawl has outgrown its individuality and branched out into so many varieties, each by itself a type, that the name serves to designate a group of greatly differing types and should be taken as generic.

It has pleased Australians to call us pilferous because we gave the variety of crawl developed in this country the name of American, and one can hardly blame them, when the light they regard us in is taken into consideration. We were trailing tailenders until quite recently, and they could hardly be expected to believe that a poor tribe of benighted swimmers from Uncle Sam's domain should do anything so presumptuous as to evolve a stroke of their own.

As a matter of fact, there is as much difference between the American and Australian types of crawl as there is between the side stroke and the trudgeon. There never was any attempt at pilfering. On the contrary, we labeled the antipodean crawl "Australian" the minute we saw it, and it was only when it became necessary to distinguish between it and our own creation that the qualifying term "American" suggested itself and was chosen.

Now even the names "Australian" and "American" are growing to be confusing, and it would be a sensible thing to follow the example set in the christening of the trudgeon and call the different varieties of crawl the "Cavill," "Kitching," "Daniels," "Handy," etc., after the men who invented them or made them famous.

A glance over the situation will show the necessity of this revised nomenclature.

The original crawl was a creation of Dick Cavill of Sydney, New South Wales, eight or nine years ago. The young Australian became convinced that the leg-thrash used by the natives of Colombo would give more speed than the scissor kick then in use. After experimenting a bit with it he adopted it, combining it with the trudgeon arm motion.

The thrash in question is produced through an alternate raising of the lower legs to a kneeling position, followed by a sudden straightening of them that whacks them down hard on the surface of the water. In seeking to make the stroke rhythmic Cavill found that the action was well balanced when he timed the catch of the right arm with the slap of the left leg and vice versa. As this necessitated swimming flat on the face he breathed only every three or four strokes that the position might be disturbed as little as possible. It was hard on the wind because the speed of the stroke was terrific.

After Cavill had obtained his wonderful speed out of the new method every one copied it and no attempt was made to modify it. To this day its action is unchanged.

Here in America we had no means of studying his invention, because the descriptions we had of it were generally from uninitiated pens and impossible to understand. We were interested, though, and we tried to imitate it, and while we thought we were copying it we were unwittingly developing a type of our own that experts now claim is the best in existence. Having nobody to tell us that the action of arm and leg should be synchronous we just ran the thrash, as we understood it, into the trudgeon arm motions, without giving a thought to time, and the stroke thus became one in which arms and legs worked absolutey independently of each other.

Of course the individual adjusted the speed of each to suit his personality, so that those with stronger legs than arms used a thrash proportionately faster than the one with stronger arms. This enabled all to use every ounce of power to best advantage. The Australian crawler is no better than the weakest part of his body.

From the American crawl came the legless stroke of which H. J. Handy of Chicago is the best exponent. Something told the westerner that the amount of power used in his kick was not warranted by the benefit derived from it, and he tried to cover the distance without it, letting his legs trail limply behind, without motion. Results justified the change. The improvement was marked and he has since made some remarkably good records with his legless crawl.

Another variety was developed by C. M. Daniels of New York. Daniels made splendid time with the American kind, both at home and in England, until he saw Cecil Healy, the Australian champion, swim. Then he decided that a combination embodying the best points of both American and Australian varieties would prove faster than either. So he took up the timed action of Cavill, making it slower and longer, and in order to keep the body moving between strokes introduced a fluttering of the feet (practically the American thrash) between the flaps of the legs.

After this it seemed as if the innovations were exhausted, but last spring a coterie of Victoria swimmers in Australia bethought themselves of trying to adapt the crawl to the stroke of the late Barney Kieran, the greatest distance swimmer the world has ever produced, and they brought out a stroke that might well be described as an amble.

Kieran maintained that proper oxigenation of the lungs was the secret of endurance, and that the oftener one breathed in swimming the better. He therefore swam the trudgeon with a heavy rolling motion that brought his mouth above water on both sides and enabled him to take two inhalations to every one of his opponents. To this he attributed his marvelous performances.

The Kieran crawlers believe that by catching with the right arm as the right leg kicks, and vice versa, the propelling movements are not interfered with, but one rolls sufficiently to breathe on both sides so that the stroke should prove an improvement of Barney's. Up to now no phenomenon has appeared to illustrate the wonders of the discovery, but this hardly means anything, because a man naturally fast is necessary besides the stroke. The theory is good, and we may soon be registering a new leap forward, but just now the Victorians are at the experimental stage. Still, it is another variety, and this makes five recognized types—the Australian, American, Daniels, Handy, and Victorian, each with distinct characteristics of its own.

"Have we reached the limit?" and "What type is the best?" are questions we are now asking ourselves without finding a proper answer. Theory would point to the American stroke as best, but theory counts for awfully little in swimming. Time only will give the true answer.

As to reaching the limit, an emphatic "no" may be said. Neither of the varieties represents the ideal stroke. One has but to drop into the New York Athletic club and watch Instructor Sundstrom perform his "swordfish" swim to realize that he has found a leg movement faster than any crawl kick in existence. So far men have tried vainly to imitate it, but the day will come when that movement will be combined with an appropriate arm action, and another step forward will be taken. And some other innovation will succeed that one, for we have much to learn yet about the application of the power at our disposal to natation.

The time may come when we will be able to vie with the finny tribe in tests of speed.

"OUTDOOR COMMON SENSE".

There is so much good common sense in the following article from *Outdoor Life* that we have ventured to reprint it as a whole. The experienced camper will appreciate its criticisms on the common tendency of the novice to overload with extras.

OUTDOOR COMMON SENSE

There is probably no one subject in the world on which there is such a jumble of near-knowledge as there is about the wilderness and its ways. A lot of writers have gone to the wilds a few times and have then come back and broken into print with a lot of lurid pipe dreams about "the best outfit" or the "habits of this, that or the other wild creature," putting down all their near-knowledge as certain fact. A lot of manufacturers have had bad dreams also, and proceeded to put them into shape as fishing lures or parts of the outfit that everyone should take who leaves his own fireside for a few nights under the sky. Most of this stuff is as useless as a set of parlor furniture. Some of it is fairly good, for it spells comfort in camp, but it means expense and a burden to get it there.

It's like taking along a big beef roast for camp use where a pound of bacon would be better from any point of view.

A man can buy enough different kinds of rods, guns, baits, beds, boots and clothes to fill a steamboat, and they run all the way from indispensable to utter uselessness and range in price from a cent to a thousand dollars.

When we get down to bedrock a trip into the wilderness means just this: A healthy man to start with—grub, clothes, bed, cooking outfit and guns and fishing tackle to fit the job. If the trip is to be a week or less the grub problem is best solved by the ration basis, which puts every bit of grub into units of one meal each multiplied by the number of meals and number of persons to give total weight and bulk.

The ration can be well or badly managed, and the traditions of the wilderness usually make it bad unless experience holds the tiller, in which case the ration will be a mixed diet built with the idea of care of health and stomach, strength-giving properties for hard work, nutriment for the body to take the place of the things used up by the body in performing the work in hand, and, last but not least, the elimination of weight.

The same ideas on a larger or bulk scale should govern the grub list on a longer trip.

Here is a ration that I have used on short trips of a week or less in the hardest kind of mountain climbing and trail work with a pack-sack to carry through the woods on foot—heart-breaking work, all of it, if you please—and yet this ration has stood the test of actual use for years and has proved its worth to my entire satisfaction and to the satisfaction of other practical men time and again. Here it is—all packed in a ¾-pound candy box—a full meal in each box and little or no cooking to do: One hardtack; two slices of bacon (cooked or raw, as you choose), two slices of dried beef, one tablespoonful of shelled nuts, one ditto seedless raisins, three dried prunes (raw), one square inch Swiss cheese, four pieces Swiss milk chocolate, four caramels, four macaroons, one tablespoonful of ground coffee, one tablespoonful sugar.

This ration contains, in its chemical value, everything needed by the body. It is a square meal that does not overload the stomach and make you slow or drowsy, and you work harder on it and longer than you can on the traditional "bacon and beans" that are supposed to form the mainstay of every camp outfit. I'll have more to say about this ration in a future issue.

The bedding question resolves itself down to this: Warmth, easy transportation and ability to keep dry while used on the ground. Therefore waterproof quality without weight means that you take a piece of muslin (unbleached sheeting) such as the women use to make bed sheets out of. Have it as wide and twice as long as your bed; sew a piece of hard-twisted cotton chalk line clear around the edge of it inside a hem to keep it from tearing; then take linseed oil and rub into it until the pores of the cloth are full. Don't paint it on with a brush; don't dip it, or soak it, or anything else, except to rub the oil into the cloth between the palms of your hands, until the cloth won't hold any more. Then stretch it up tightly in the shade and dry for ten days; then put it in the sun and dry for three days more, alternate sides up to the sun. Use ordinary boiled linseed oil and nothing else. This makes an absolutely wind-proof, water-proof sheet to lay on the ground to build your bed on, and gives enough length to pull up over the bed after it is made and you can sleep safely and in comfort through a gale of wind, a pouring rain or a snowstorm, and by pulling it up over your head you can dispense with a tent when you have to "go light." You can use it for a tent or a fly or make a two-man tepee out of it. The bedding should be two pieces made as follows: Waterproof khaki, blanket size, lined with a soft all-wool blanket with carded wool between the two just as an ordinary cotton comfort is made. That's all there is to it and it is warm, dry, comfortable, healthy and light-weight.

. Clothing is a matter of personal taste, but it should be selected with with an idea of not binding the limbs, of keeping warm but not too warm and—most important—keeping the wearer dry. A change of underclothing should never be absent, clean and ready to put on in case of a soaking rain, a fall in the river or killing travel that brings one into camp wet with perspiration. Dry underclothing then means good health and rest.

Wool—light, soft, loose-woven wool—is the best for all except the outside clothes, which must take the strain of contact with brush and dirt. For these Khaki is as good as the market affords.

Shoes must be strong, of the best wearing leather obtainable. Woolen socks are better for hard tramping than cotton, but they should be soft and loose-woven, as everything else of wool should be, and they should be washed daily in clear water to keep them soft and clean, for without the softness and without having them clean they are worthless.

Personal outfit can be curtailed or added to as the person sees fit; generally it can be cut down to good advantage rather than added to.

For tramp trips the pack-sack of water-proof canvas, using two long 2-inch straps that run through loops and cross sawbuck fashion over the back of the pack are the best for actual use, and you can make the best for actual use, and you can make the whole outfit yourself. The whole outfit for packing should weigh not over 60 pounds and this will grill the ordinary man on a ten-hour tramp. I have carried 95 pounds up the mountain trails, but I don't unless I have to, for that is work that is heart-breaking.

Transportation has a lot to do with the whole outdoor question, for the man who travels in a canoe or boat can take easily and comfortably four times the weight and bulk that the pack horse is limited to, and the pack-horse can take four times the load of the man who goes afoot and carries his all in his pack-sack; so there can be no hard-and-fast rule for the assembling of an outfit except this: Don't take a pound of unnecessary weight not add a useless article to the outfit, and when an article proves useless abandon it then and there. Then you will learn swiftly what not to do.

The cooking outfit is a simple proposition that hardly needs comment.

The matter of guns and fishing tackle is altogether personal and no amount of argument for or against any particular gun or rod would convince the other fellow that it was the right thing, if he had set his heart on having something else; so advice on these subjects from anybody would not be worth the paper it was written on.

The "one best bet," the one most valuable thing for the wilderness traveler, is an intimate knowledge of the wilderness itself—its ways and its resources and how to make them useful as you find them. This means a practical study of botany, especially, so that one may identify the plants along the way, and, having identified them, know whether they are good or not, whether eatable or otherwise, and the chemistry of them in actual use, which means to know what the effect will be if you eat them or use them in any way. Couple this with a knowledge of camp usage and woodcraft and the outfit you carry means very little, for you can make the wilderness support you.

A good outdoor man could bet that you could set him down in the wilderness as naked as he was born and without a single thing to work with except what the wilderness affords, and that he could come back to civilization in ninety days fat, happy, healthy and well clothed—and he'd win.

El Comancho.

THE CITY AND FRESH AIR.

By R. Tait McKenzie, M D., University of Pennsylvania.

The best time to treat a case of tuberculosis is ten or fifteen years before it begins.

There must be two things for every case; (one), the seed of infection, and (two) the soil suitable for its growth and development. The way in which a consumptive patient becomes a center of infection has been spoken of by others; how, in the expectoration, there are millions of the bacilli which if not destroyed become dry and float about in the dust of the house and street like the pollen of some evil flower, to be breathed in, and deposited in the air passages of the nose, larynx and lungs and there to multiply and bring their disastrous harvest.

It has already been pointed out how important it is to destroy these seeds of infection coming from the patient, but no matter what precautions may be taken we are sure at some time to become the unwilling host of the tubercle bacillus. I wish to point the way in which the soil on which it falls may be fortified against its attack.

The widest road of infection is through the mouth, nose and lungs, and nature guards this road in two ways.

The air entering the nose is strained and the larger particles of dust which are apt to contain these germs are caught on the hairs at the entrance of the nostrils. The air is also warmed before it reaches the lungs, and such dust as remains after this straining is deposited on a mucous surface that has minute hairlike processes called *cilia* which look under the microscope like the pile on velvet. These in the healthy lung are in constant motion, directing the secretions and the particles of dust toward the outlet of the larynx, thus preventing infection from getting a start. When the air is taken in without being strained or warmed, these small protectors may become chilled and paralyzed in their action and the infection may be too great to be overcome, or if the breathing be shallow and inefficient their action may be too feeble to remove the foreign matter.

There are two ways in which protection against infection can be given. First, by breathing through the nose. This insures the partial purification and warming of the air before it gets to the lungs. Second, by the practice of deep breathing. This need not take much time. A few minutes in the morning with the window open, filling the lungs to their utmost capacity, will expand the air-cells and set the cilia to work. This may be repeated during the day and at night, and will have a most invigorating effect in itself, an effect which is increased if a sufficient amount of light exercise be taken to set the blood actively circulating and to make the system call for more air.

The combination of mouth breathing, insufficient breathing, foul and vitiated air, makes the ideal condition for the infection and growth of tuberculosis.

While this is important for the grown man and woman it is infinitely more important for the child who is getting the growth and strength that is to serve through the years of maturity; and it is during this period that every opportunity must be taken to give him a chance to grow up naturally.

The natural occupation of a child is play in the open air where he may run, jump, wade, roll on the grass and bask in the sun, but how few are there who can ever hope for such a chance.

Even the most favored of the city children attending our schools have from four to seven hours taken from their natural occupation of play, spent for the most part in sitting and engaged in such minute movements as writing, where the chest is cramped, the back is bent, and the nervous system overstrained.

A wise board of education, realizing this situation in Philadelphia, is now making every effort to improve the condition.

Gymnasia are being designed for each school, that children may have the exercise which is so necessary for their normal growth, and playgrounds are being provided, even on the roof where the land is not obtainable, that they may practice the sports and games by which their health and strength is secured. These efforts deserve and should have your support.

But what is to be said of those whose days must be spent in the overcrowded shop or factory and whose scant leisure time finds no better place than the street or theater. Their liability to disease is infinitely greater. While the death rate from tuberculosis is 15 per cent, or one in 7, in the prisons where life must be spent away from the sun, the mortality rises to 50 per cent.

Such children, in common with school children, must have some provision made to counteract these conditions which are unfortunately so far beyond our control.

If we are to preserve our vitality and virility as a nation we must raise the health standard of city dwellers. The way this can be done is by giving every child his undoubted right to free play in open air. *We must have playgrounds.*

A child will not travel more than half a mile to a playground, so that the use of Fairmount Park, of which we in Philadelphia are all so proud, is limited to an occasional excursion; but any lot of 100 feet square can be changed from a dumping place for refuse into a source of health by simple means that need not be out of the reach of any community.

A few simple swings and seesaws, a pile of sand, a shelter from the sun and rain and a wading pool, in charge of an attendant who will direct the children in their games, involves a small outlay.

These small playgrounds should be established on every vacant lot in the crowded parts of the city.

In addition to these, large playgrounds, such as Starr Garden, should be established with a running track for boys, a pavilion for games and dances, swings, apparatus for gymnastics and basket ball and other games, a wading pond, and a swimming pool for the older children, with a gymnasium to be used at night or in inclement weather.

In addition to these, large playing fields like Belmont plateau should be obtained in the outskirts of the city for special occasions and for field meets.

Already an association has been formed for carrying out all these objects, and it is only by your enthusiastic support, both by your vote and by your influence, that it will be made possible to provide this most important means of preventing and stamping out the great plague against which we are all fighting.—From "The Fresh Air Magazine," March, 1910.

◆

Edward Payson Weston ended his ocean-to-ocean tramp at 3:10 o'clock May 2, 1910, at the New York City Hall. He was 12 days ahead of his schedule of 90 days for his transcontinental jaunt.

He was greeted at the City Hall by a crowd of 50,000 people, all anxious to see the veteran pedestrian and to greet him on his success. Mayor Gaynor, in receiving the letter addressed to him by Mayor George Alexander of Los Angeles, said in part:

"My old friend, I am mighty proud of you for what you have done. You started on Feb. 1 at 4 o'clock from Santa Monica, and you get here at 3:10 this afternoon. Marvelous, simply marvelous. There has never been anything like that in the history of the world.

"Weston, you are a benefactor to the human race, for you have shown people what can be done by a man who lives simply and healthfully in the open air. You have caused people to go out into the open and taught them how to live. Now if they will only follow your example and precepts they ought to live to be a hundred years old instead of the proverbial threescore and ten.

"By your success in crossing the continent in seventy-eight days you have surpassed every feat of ancient or modern times and athletes except your own. That is a splendid record, perfectly splendid. And I have here, on behalf of the committee to welcome you, a purse which I am very glad indeed to give you."

WASTE OF CHILDREN'S LIFE.

American race waste—more serious than race suicide—is pointed out in Census Mortality Bulletin No. 104, in which it is estimated that annually in the United States from 100,000 to 200,000 babies under five years of age die from preventable causes. This great loss of life among the little ones at the period when they are most loving and most lovable could be prevented, is the opinion of Dr. Cressy L. Wilbur, Chief Statistician for Vital Statistics of the Census Bureau, who prepared the bulletin, on the basis of present-day knowledge of sanitary measures. For the accomplishment of effective preventive work in this direction, Dr. Wilbur holds that the prompt registration of all births and the more careful and precise statement of causes of death by physicians are essential.

In analyzing and comparing the totals obtained in the compilation of transcripts of death returns received for the year 1908 by the Census Bureau from the entire death-registration area of the United States, as set forth in the bulletin, those for age periods show a somewhat increased per cent of deaths of infants under one year for 1908, although the ratios for each of the individual years from one to four are identical for 1907 and 1908. Of the total number of deaths, 691,574 returned for 1908 from the entire registration area, it is stated in the bulletin that nearly one-fifth were of infants under one year of age and over one-forth of children less than five years of age. It is declared that the brute force of the figures representing the actual deaths is more impressive, however, than any ratios or than the rates of infant mortality, even if the latter could be computed in the absence of proper registration of births. Here are the figures:

More than one-eighth of a million babies, under one year of age and fully 200,000 children, under five years of age, died among about one-half of the total population of the United States in the year mentioned. It is considered probable that fully 200,000 more died in those cities and states not included in the Census Bureau death-registration area. In this connection Dr. Wilbur quotes Professor Irving Fisher's conclusion that of all the diseases of infancy, having the median age one year, 47 per cent may be prevented; and that of the diseases of childhood having median age two to eight years, 67 per cent may be prevented.

"It does not seem unreasonable," Dr. Wilbur states, "when we consider the fact that there is apparently no reason why infants, if properly born, and this means simply the prevention of ante-natal disease and the improvement of the health and conditions of life of their parents, should die at all in early infancy or childhood, except from the comparatively small proportion of accidents that are strictly unavoidable."

The bulletin continues with a statement that the general death rate of a country is largely dependent upon its infant mortality, because the death rates of infants and young children are high and they affect a relatively numerous element of the population. Exact study of the incidence of disease upon infancy and childhood is most important, and it is imperatively necessary that there should be more effective registration of births throughout the United States for this purpose. The extremely important rate known as "infant mortality" is the ratio of deaths of infants under one year of age, not to population but to the number of children born alive during the year. This most important ratio should be readily available for the comparative study of deaths of infants in all of our states and cities, but, the bulletin states, in the great majority of them, unfortunately, the registration of births is worthless, and ratios calculated upon the returns would be deceptive and unreliable.

"The possibility of great saving of human life during infancy and early childhood is emphasized by the estimates made by Professor Irving Fisher, on the basis of independent medical opinions, for his Report on National Vitality to the National Conservation Commission, as to the 'ratio of preventability (postponability)', that is, ratio of 'preventable' deaths from cause named to all deaths from cause named for certain diseases of early life.

"Out of every 100 deaths that occur from each disease in which the median age at death is under 5 years, there could be prevented the following numbers; Premature birth, 40; congenital debility, 40; venereal diseases, 70; diarrhoea and enteritis, the most important cause of infant mortality, 60; measles, 40; acute bronchitis, 30; brònchopneumonia, 50; whooping cough, 40; 'croup' (which means diphtheria), 75; meningitis, 70; diseases of larynx other than laryngitis, 40; laryngitis, 40; diphtheria (under its proper appellation), 70; scarlet fever, 50.

"Other diseases especially fatal to infants and children would perhaps show equally great ratios of preventability; they do not appear in the above list because their median ages are above the limit chosen or because, as is the case with 'convulsions,' they are grouped with other and incongruous causes.

"The possible saving of life for 'general, ill-defined and unknown causes', including 'heart failure,' 'dropsy,' and 'convulsions', median age 35 years, is 30 per cent. The median age of 'convulsions' alone is less than one year, and it is probable that at least the ratio of preventability of diarrhoea and enteritis (60 per cent) would apply to it. The term is an indefinite one, being expressive merely of the symptoms attending the true cause of death; nevertheless no fewer than 6,450 deaths were compiled therefrom for 1908, although, in compilation, any other definite cause is preferred. The term is no longer employed by well-informed physicians in reporting causes of death, and it is possible, by inquiry made by the local registrar immediately after the receipt of this and other unsatisfactory statements, to practically eliminate them from the returns, as has lately been done for Chicago.

"In the light of the figures quoted above it would seem that practical sanitation has only made a beginning in the work of preventing the occurrence of infant and child mortality. The ground has only been scratched over. Deep stirring of the soil and thorough cultivation of all the means available. with our present scientific and medical knowledge. for the guarding of young human lives would produce startling, and from all past human experience almost unbelievable, results. Public health, as a function of government, is itself only a creation of the middle part of the last century, dating from the utilization of the knowledge available as a result of the operation of the English laws for the registration of vital statistics (1837). Even in England, however, no systematic efforts have been made until very recent years to utilize to their utmost possibilities the facts already known. The infant mortality of England was higher for the years 1896 to 1900 than for the years 1861 to 1865, and no marked reduction in the early rates occurs until the present decade.

"It is time that greater attention be given to the subject in the United States. The prompt registration of all births and the more careful and precise statement of causes of death by physicians are essential. Such terms as 'convulsions,' 'marasmus,' 'debility,' and the like should no longer be tolerated when the true cause of death can be determined."

NOTICE! Following the custom of other educational journals "MIND AND BODY" will not be published during July and August.

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NOTES AND COMMENTS.

—THREE COLLEGE ATHLETES have had an ideal shattered by reading a paragraph in a speech that Sir G. Trevelyan made in London before the Publishers' Circle at a recent dinner, says the New York Sun. These men, in addition to being athletes, are devoted to Thackeray and "The Virginians."

There is a reference in that book to the prowess of George Washington as an athlete, particularly as a broad jumper. This is to the effect that Washington was able to jump 22 feet, which, considering that it was away back in the Eighteenth century, was some leap. Although the best American record now is 24 feet 7¼ inches, it has not been standing so long, and in the early days of American athletics 22 feet was a remarkable performance in the broad jump.

These three used to pride themselves on knowing about that performance credited to Washington, and they pointed out how in 1876 and for three years following the American championship was won by leaps of less than 20 feet, and that from 1880 to 1885, inclusive, the champion did not do 22 feet, although close to it on several occasions.

So they used always to tell folks who asked about great broad jumpers that Washington held the American record from about 1752 to 1885. What shattered all this was the following from the Trevelyan speech:

"I was present at a dinner when Thackeray discoursed to a delighted audience of young people about "The Virginians," which he was then writing and which seemed to fill his mind to the exclusion of everything else. Among other matters he asked us, all around the table, what was the widest jump any of us had ever known, and when we agreed upon 21 feet he said: "Then I must make George Washington jump one foot more."

—THE FOURTH ANNUAL CONGRESS of the Playground Association of America will, as announced some time ago, be held this year in Rochester, N. Y., from Tuesday, June 7th, to Saturday, June 11th. The papers, discussions, exhibitions and demonstrations will be of such character to make it worth while for anyone interested in playground work to attend the congress. Programs with full information may be had by applying to the headquarters of the Association, No. 1 Madison Square, New York City.

—ONE OF THE BEST PAMPHLETS advertising a summer course that we have ever seen is the little folder issued by Institute and Training School of the Y. M. C. A. of Chicago. The first page reads as follows:

Asleep on His Job.—Rip Van Winkle slept for twenty years and when he awoke, found his equipment fallen to pieces and utterly inadequate, his joints stiff and his mind incapable of appreciating the changes that had taken place in Society during his long sleep. Thereafter old "Rip" spent his time reminiscencing. There was nothing new, nothing constructive and no future in his conversation. He was a "back number."

A long sleep is disastrous. In these days of rapid development and radical changes a man becomes a "back number" in much less time than it took to put "Rip" on the shelf. Long sleeps are out of date in the world of activity and indulged in only by folks who wear woolen socks in July.

Beware Lest You Become Like Him.—Mr. Van Winkle's "frau" drove him to the woods. What will you do? Will you take to the woods on the mountains and drink with the old men of antiquity and then fall asleep as did Rip Van Winkle, or will you take to the Camp on the shores of Lake Geneva and drink from the fountains of modern knowledge?

A Real Feast.—"Rip" thought he was having a fine feast that afternoon on the mountain top with those funny old "back numbers." There is a better feast in store for you at Lake Geneva. Here is the seven course Menu:

Then follows a description of the seven courses offered. The circular that may be an awakener to some of our readers closes as follows:

A Reminder.—Rip Van Winkle became a "back number" because he failed to heed exhortation and advice. He was satisfied with what he was and had and then fell asleep. It does not take *work* to become a Rip Van Winkle nor much traveling to find the glen in whose peaceful shadows one may be free from the call of service and the demand for preparation. *All one needs to do is to sleep.*

—THE EFFECT OF OPEN AIR WALKING on the health of children has been studied by the Berlin School of Physicians, and the investigation should prove of special interest to school authorities in every land. Dr. Ralder, who has made the reports of this walk cure, states that fifty-six pupils were sent on walking trips in three groups, each under the leadership of a teacher. On an average the children walked from ten to fifteen miles a day. They were given coffee, milk and white bread for breakfast. During the day they got bread and butter. In the evening they were given a warm dinner. One series of well-nourished children did not change weight during the six days' tour. The results of the tour were strongly manifested some time after it was over. During the following three months fifty of the fifty-six children gained from three to twenty-two pounds in weight. From this it would appear the doctor says that the violent muscular exercise stimulated the organism to increased metabolism and more rapid growth. This being the case, what shall be said of the present movement in rural districts of transporting by cars or stages those children living in country towns to schoolhouses centrally located together? The old-fashioned healthful walk to school even is taken away by the present concentration system. Throughout New England at least no pedestrianism is cultivated. Gymnastics, drills and such sports as are the fad of the day, must serve "to stimulate the organism to increased metabolism," for country juveniles no longer walk, nor do city children who live in flats know how to run up and down stairs; they take the elevator.—Exchange.

OUR TRIBUT TO THE LATE MR. GILBERT.

Mr. Melvin Ballou Gilbert died on May the 11th at his beautiful country home in Wilmington, Mass., being only 63 years old. Our profession mourns in this loss a man who has given to it a most valuable and unique contribution. Mr. Gilbert's aesthetic and classic dancing will live long after the present craze for folk dancing will have blown over.

He was born in Portland, Me., where he also opened his first dancing school. In the summer of 1892 Mr. Dohs, then instructor in the Portland Turnverein, came to the Harvard summer school and taught some marching calisthenics, which he told Dr. Sargent he had learned from Mr. Gilbert in Portland. It was through him that Dr. Sargent and Mr. Gilbert first met. In this first meeting Dr. Sargent pointed out to him that the weakness of dancing from the physical educator's point of view was that it only involved the legs, leaving arms and trunk entirely out of consideration. It was upon this suggestion that Mr. Gilbert set to work and built his entire structure of dancing. In 1894 he became first associated with the Harvard summer school, from where his work soon spread all over the country. In the summer school exhibition that summer he gave two numbers, one he called "Aesthetic Calculations," the other was "Die Gavotte der Kaiserin." The fall following he became a member of the teaching staff in Dr. Sargent's school, where he has taught up to the present. During the months of June and July he maintained a normal school which was very largely attended and from which a great number of graduates have come forth as enthusiastic exponents of his work. There is hardly a gymnasium where his work is not represented. What makes Mr. Gilbert's work so valuable a contribution is that constant stress is layed in all his dancing upon elegance of form, to perform every movement beautifully. Excellency marked all his work and so persistant was he in his demand for beauty, that all his deciples inherit this ambition for doing well. His dancing has really become a fine art which offers to woman an opportunity to excel in the same way that man excels in artistic performances upon apparatus. In April, 1904, during the New York convention of the Physical Educational Society, Mr. Gilbert gave a demonstration of his work with the seniors of the Sargent school, which was quite a revelation to many present. He also read a paper at this convention. Besides his connection with Harvard and the Sargent school he taught at the Boston Normal School of Gymnastics, and a number of fashionable societies in Boston.

Mr. Gilbert's fatal illness, which finally developed into bronchial pneumonia manifested itself about six weeks previous to his death, although he was confined to his bed only the last two weeks. His death came very suddenly after a decided change for the better. On Friday, the 13th, the funeral services were held and the friends present as well as the many beautiful flowers gave ample evidence of the esteem in which he was held by his friends. Mr. Gilbert will be remembered by his pupils as a most inspiring teacher, a teacher who in his personality represented what he taught. In the physical training profession his memory will live as an earnest co-worker for a cause, which in time is hoped to lead our people to a more idealistic way of living.

C. L. S.

PLAY AND PLAYGROUNDS.

PLAYGROUND GAMES FOR YOUNG CHILDREN.

By William A. Stecher.

The old-fashioned Long Jumping Rope can be used in so many ways to interest and employ a large number of children that one wonders that it is not used more. Here are several ways of using it.

Form the children in a column of twos. If there are too many, form several columns, each with its own rope. Tie one end of the rope to a post, or let a child hold it. Swing the rope in a circle towards the class and at first let them run through at will. Later let them run through at every second swing. After that let them catch hands by twos and run through at every second swing.

After the running is accomplished fairly well, take up the jumping over the rope. The rope must be held so lightly that if any child in jumping touches it, the rope will fall. Insist that all jumping is done on the balls of the feet.

Lastly, take up the jumping "in the rope." Let a child run in, jump twice, or three times, and then run out. Later have this done by twos.

The long rope may also be used for high jumping. Girls especially like to try the high jump in this manner. The rope is first held at a height which everyone in the column can clear. It must be held so lightly that if anyone does not get over, the rope will drop. Then raise the rope about two inches for the next jump, and so on. At times introduce a quarter or half turn with every jump.

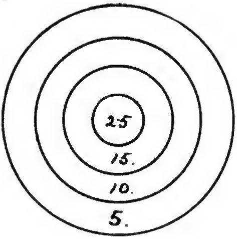
This same rope may be used in playing the game of "Hopping Circle." Tie a bean bag to the end of the rope. Then form all players into a circle. The leader takes his place in the centre of the circle and swings the rope with the attached bag around in the circle close to the ground. As the bag approaches a child he hops up into the air allowing the bag to pass underneath his feet. Who is struck by the bag steps out, until later only the most expert players are left.

Ring Toss is a game of skill that appeals to many children of all ages. As it can be played in a very small place and the necessary apparatus is inexpensive, it is an admirable game for a limited number of children. The apparatus consists of four rubber rings five inches in diameter and one base. This base is of iron, six inches in diameter, having in its center a hub four inches high. The object of the game is to toss the rings from a distance of about ten feet, toward the base. Who gets closest to the base counts one. Twenty-one points are a game.

If the base is set in the center of three or four concentric circles, drawn with chalk on the pavement, another feature of interest is added to the game.

The circles are about one foot apart. The player is credited with the number he throws. At least one-half of a ring must be within a circle to make it count. A "ringer" i. e., when the ring encircles the hub, counts twenty-five. Who first gets one hundred points wins the game.

This ring toss set may also be used like a regular game of *Quoits,*



as two bases come with every four rings. Do not buy cheap sets as they will not last. Rubber sets are best and ought to last for years. They cost $3.00 per set of four rings, two red and two black, and two bases. If you can not buy them of your local dealer send to Howard George, Frankford and Unity streets, Philadelphia, Pa.

Third Tag and Run. This is played with the players standing with the hands raised as for "Hand Tag," one player standing in front to tag. The hands must be held forward to receive the tags, of which three are given to the same or different persons. As soon as the third is given the one giving it turns and runs to a goal behind him (previously decided upon) while the one receiving the third tag pursues him. If caught before reaching the goal, the runner is out of the game.

This may also be played with sides, as follows: Two divisions line up, facing each other at a distance of about fifteen feet, the hands being held as before. The leader of one side advances to the other and gives three tags, then turns and runs to his own place on his side, pursued by the one receiving the third tag. If caught before reaching his own place, he takes a place on the side catching him, and that side sends someone out to tag. If not caught, the next in line becomes leader, and so on till someone is caught, when the other side continues. The side having the largest number of players at the close, wins the game.

Day and Night is a tag game of similar character but more highly organized. Separate the players into two ranks. These face each other, at one step distance. One party is named Day; the other Night. Take a coin or a flat piece of wood, designate one side as Day, the other as Night. Toss it up. Immediately after it has fallen call out the side on top. Should this be Day, this party runs to its goal (about 25 feet off), pursued by Night. Who is tagged in this pursuit is a prisoner and out of the game. Continue until all of one side are caught.

An amusing variation of this game that greatly pleases younger boys is to allow the one who made a prisoner to mount on his back and have the prisoner carry him back to the line.

Boys like games that give them a chance to "pummel" someone. The game of "Lame Goose" is of this character. It requires no apparatus and will be played in a corner of the playground for long times by boys eight to twelve years of age.

The one playing the goose takes his place at one corner of the yard, called "home," a den of about five or six feet may be chalked off on the floor. After three running steps he must hop on one foot and tag one of the other players who are running about. When one is tagged, and so becomes goose, he is chased by the other players, who strike him with knotted handkerchiefs, until he is "home." Should the goose in his attempts to tag a player put both feet on the ground he also is chased home by the other players.

Break Through, also called "Bear in the Ring" is another game that appeals to boys and also to girls of eight to twelve years.

A number of players join hands and form a circle, the bear-pit. One of their number, previously selected as the bear, wanders about on the inside, attempting to get out by testing the bars. The bear may break through the bars by placing his weight on the grasped hands, or jump over or crawl under the same. If he breaks through and escapes, the keepers give chase, the one catching him in turn becoming bear.

Bogey Man or "Black Man" is a strenuous running game adapted for cold windy days. As much skill is needed to get through a great number of players the game also appeals to older boys.

A player, chosen as Bogey Man, stands at one end of the yard or play space, the other players stand at the opposite end. The Bogey Man calls, "Are you afraid of the Bogey Man?" The others answer, "No," and run, trying to pass him and reach the opposite end of the yard. The Bogey Man tags one or two and they go with him to his side of the yard, and play as Bogey Men. The play is repeated until all the runners are caught by the Bogey Man and his helpers. The last one caught begins a new game.

Warm days often call for games that cause merriment and are not too strenuous. *The Beetle is Out* is a game of this character.

The players form a closed circle, shoulder to shoulder, facing inward and having their hands, with palms open, behind their backs. One of the pupils is outside the circle. He carries a handkerchief with a knot tied in one end of it. He runs around the outside of the circle and puts the handkerchief into the hand of one of the players (if possible, without being noticed by the others). This one at once strikes his right-hand neighbor on the back with the knot, the neighbor seeking to avoid the blows by running around the circle until he regains his former place. The pursuer now starts around the circle placing the handkerchief (the beetle) into someone else's hand, and the game continues as before.

Pussy wants a corner is another game of the same type not requiring great exertion.

Each player chooses a place, a corner of a house, an apparatus, etc. All, with the exception of one, have places. These places being decided on, all go to the middle of a circle and at a signal run for these places. The one who fails to get a place begins the play. He goes from place to place and says, "Pussy wants a corner." Meanwhile the players exchange places at will. The seeker for a place endeavors to secure one by outwitting some one who is exchanging places with another and by getting into the place first. The one thus deprived of a place becomes the next seeker. If a seeker, after repeated effort, fails to secure a place, he may call, "All change places," and then all must exchange. In the confusion of this general exchange he tries to get a place.

THE PATRIOTISM OF PLAY.

When the Iron Duke said that the victory at Waterloo was won on the cricket fields of England he gave forcible expression to the principle upon which is founded the Playgrounds Association of Philadelphia.

The men and women who have given of their time and treasure to extend the playgrounds of this city are something more than philanthropists. They are patriots.

The happiness which the children will derive from increased facilities for play is the least of the association's contributions to the community.

Happiness is the normal condition of childhood, and hardly anything short of present hunger or actual bodily pain can change it.

The child who has always found his fun among the garbage cans and ash barrels of a blind alley, or along the reeking gutter of a never-cleaned tenement street, doesn't miss the wholesome games of a park playground. He doesn't know any better.

The taste for craps and cocaine may be quite as easily formed as that for baseball and giant strides. The boy may learn that ducking the cop is quite as exciting as sliding into second.

But when he has learned these things, his possibility of usefulness to the state is converted into a menace. And when a considerable number of boys have acquired this knowledge and have come together to compare notes, woe betide the commonwealth.

The appeal that playgrounds make to the sentimental nature of men and women is strong. Pure love for children in the abstract is one of the most powerful incentives for good works.

The good that comes to the child from wholesome activity in the open air is in itself strong enough to justify whatever expenditure may be made to promote city playgrounds.

But after all, the great claim for public consideration made by the playgrounds is not sentimental nor philanthropic. It is, in the community sense, selfish. It is dictated to a free state by the law of self-preservation.

Whatever opposition or indifference exists to the public playground idea is based on ignorance. Because children in the open country or in small urban communities find opportunities for wholesome play there are those cynics who sneer at the idea of regulated play for the children of a crowded city.

Nature has provided playgrounds for all the children in the world. The fields and the woods and the mountains and the brooks and the ponds and the beach, and the great ocean itself, supply all the opportunity for play that any child might ask.

But civilization robs the children of their birthright, herds them in noisome cities, crowds them into narrow streets and alleys and hires janissaries to war on them and to make them feel that the city and state are their natural enemies.

Then the community spends millions of dollars on courts and penitentiaries to take care of its machine-made criminals.

Simple justice should prompt the city to give to the boys and girls something as a recompense for God's playgrounds of which we have robbed them. But if justice be not done, we can rest assured the wronged children will have their revenge.

It is particularly urgent that in a free community the wholesome democracy of play should be encouraged to the fullest extent. In a despotism where soldiers are kept ever ready to suppress a rabble it is not so necessary. But as the boys and girls of our self-governing cities will be the men and women of tomorrow, their healthy growth of body and mind is the one absolute essential for the preservation of popular institutions.

The day will come when a city will as soon think of being without a fire department or schools as without playgrounds where its children can most easily and joyfully learn the great lesson of representative government—to abide by the rules of the game and to play fair.—*Philadelphia North American.*

PLAYGROUNDS.

E. B. De Groot, Director of Physical and Social Activities, South Park, Chicago.

What is a playground? What should a playground be?

The answer to the first question is that a playground is a *rallying place* for boys or girls, or both. A playground cannot be reduced to less than this and still be a playground, except in the case of children too young to wander from their homes alone.

Every city, every suburban town and every country village has its rallying places for young people, supplied without conscious provision, and each has therefore a perfectly adequate playground system judged from the point of view of those who make use of these playgrounds.

These rallying places in the city are for the younger the street corners, occupied by saloons from which ooze drunken and profane men; the filthy alleys; the streets, in the midst of street car, horse and automobile traffic; the railroad yards and the river docks. For the older children, there are the penny arcade, the five cent theatre, the combined saloon and bowling alley, the amusement park and the combined saloon and dance hall.

Note the activities which spring from these rallying places. In the case of the younger children, there is the "jollying" of drunken people who come from the saloons; the flipping of street cars, trucks, and automobiles in the street; the chase and sights of the police patrol wagon; the jeopardizing of limb and even life in the railroad yards and at river docks; the teasing of the recent arrival to our shores by calling him a "Shannacher," a "Polock," a "Dago," a "Turk" (all prefixed with equally harsh and more profane adjectives); fist and stone fights between gangs, and a great list of mischievous acts which result in running a race with the "cop."

The activities of the older boys which spring from their rallying places are, stealing "junk" which may be sold for money, and which in turn may be used to purchase tickets to shows where they get their "money's worth" in "spicy" sights and sayings. As they grow a little older, visits to the cheap and spicy theatre increase. visits to the combined bowling alley and saloons are added, and the culminating activity is the frequent visit to the combined saloon and dance hall.

The conclusion with reference to the city, is that the modern city, just as it exists, represents a marvelous playground system and one perfectly adequate from the point of view of those who make use of this system.

The question, however, is not whether the younger people in the city are satisfied with the present system of playgrounds. *The vital question is whether we—parents, teachers and other citizens interested in the commonwealth—are satisfied.*

At this point I might enter into a discussion of great length concerning the connection of the present playground system with juvenile delinquency, but is not the connection so perfectly obvious that "he who runs may read"? The situation in the suburban town and country village is less apprehensive, but still serious. But here, as in the city, the playground is the rallying place for boys and girls. These rallying places are the railroad station, the drug store with its soda fountain and candy and cigarette cases, the post office, the camp in the woods or in the yard of some boy whose father does not complain about the shrubbery being destroyed. One might naturally suppose that the ample school yard in the suburban town would furnish a rallying place for children out of school hours, but such use of the school yard is discouraged by nearby neighbors, who moved to the suburban town for quiet.

The activities of these suburban rallying places are almost as numerous and little more constructive in their effects than the activities of the city rallying places. Children in the suburban town usually have more money to spend than children in the city, and they use this money to vie with each other in seeing who can drink the most soda and eat the most candy. They pester the railroad station agent and worry the postmaster. After the camp in the woods is completed there is much idleness on the part of the campers and "Satan makes mischief for idle hands" in camp as elsewhere.

The significant question then, both in the city and in the small town, is: What should a playground be? The answer is that it should at once be a rallying place and a place of outlet for all play instincts and tendencies into channels which react upon the players with constructive effect. The first essential is to recognize and make ample provision for the differences in the play instincts and tendencies among children.

There should be a rallying place for the exclusive use of young boys and girls together up to, approximately, ten years of age. There should be a second rallying place for the exclusive use of girls more than ten years of age. There should be a third rallying place for boys more than ten years of age. These three separate and distinct rallying places might be within one large enclosure, or one rallying place might be used at different times by the three different groups; but I insist that this arrangement is fundamental in any adequate playground scheme. With the rallying places well defined and provided, the next step is to equip each of these places with precise reference to the play instincts and tendencies of each of the groups.

The modern playground movement finds its bone of contention in the play leader. Business men, city councilmen and congressmen think it preposterous that any one should be employed to teach or supervise the play of children. They were not taught to play! Why should children in this day be taught to play games? In the recent debate in the United

States Congress concerning the appropriation for playgrounds in Washington, one congressman wished to know whether the bill presented was a game of "skin the cat" or "skin the treasury." His suggestion was that instead of a play leader there should be a policeman.

The modern playground, with its efficient play leader, is the best connecting link we have yet discovered between the old and new order of things in the march of civilization. The physical, social and moral development that came to most mature men and women of this day when they were boys and girls, will not come to this and the next, or perhaps any future generation of children, by the same or similar means.

Cooperation, obedience to authority, patience, persistency, respect for the rights of others and many other homely virtues were in the old order of things largely developed by work and pleasures shared with parents.

In the order of things which has come upon us so quickly and so completely, it seems impossible to travel any of the old paths of relationship between parents and children. I therefore repeat that *the play leader is the connecting link in the situation.* The efficient play leader devises uses of the playground that develop in the children those homely virtues common to the best periods and relationships in American community life. He should take the place of parents at the play time in guiding and directing the child of any age into channels of action which help to make him a blessing to the family, a social asset to the state and a glory to the nation.

THE PLAYGROUND AND ITS NEED.

By CARL L. SCHRADER, Harvard University.

No social movement in the past years has received the general approval as has the playground movement. Wherever the question was left to the vote of the people, as was the case in Massachusetts, it was decided in the affirmative, which fact is sufficient to prove that the need for such an institution is being felt. So rapid has been the growth, that it can hardly be said that the movement was ever an experiment with us, for we profited so extensively by the experiments carried on for many years in Europe, particularly in Germany, where we find a history of playgrounds dating back thirty years or more.

A child is a child the world over and while nationality, tradition and natural environment may dictate certain specific play activities, the general truth has been established long since, that the period of play, that is to say, the period where play is taught, is a necessary requisite for the fullest development of the child. When a few years ago the National Playground Association was founded, none of its organizers dreamed that their efforts would bear such abundant and immediate fruit, for the growth in the number of cities and towns maintaining playgrounds has been beyond expectation. From the time of the first congress held in Chicago to the third held in Pittsburgh last summer the number of playgrounds maintained had almost trebled.

This growth has been made possible and was nourished by enormous sums of money. The cities seemed to vie with each other, one trying to outdo the other in its expenditure of money for the creation of playgrounds, or better recreation centers. Every investment, whether made by an individual or a municipality, is expected to bear interest, if not in dollars and cents, then certainly in results attained in welfare. It is reasonable, then, to raise the question of interest in connection with this great investment. Is the money set aside for this movement spent wisely in most cases? Are we not taking growth for development? Are the playgrounds in reality the social centers for the ethical training of our youth, as theory claims they might be? These and many other questions are justifiable when measuring the result with the outlay of money. Newspaper reports which print in full an opinion which is pressed from a visiting committee from another city inspecting the playgrounds, an opinion which usually is pregnant with flattery, serves only to satisfy a local pride, but does not reflect the conditions as they really exist.

Rapid growth, and this must be attributed to this movement in our country, is to be discerned mainly in an increase of grounds in the total, and an increase of attendance per ground, a fact which may satisfy the layman and serve the statistician, but will fail to convince those who seek qualitative results rather than quantitative ones. A rapidly growing child usually shows marked deficient development, a fact which parents observe with grave anxiety. Here we have one of nature's pranks, with which we may interfere but little, but our playground problem need not be handicapped thus. It would be gross pessimism to deny that much good has resulted from the playground, especially in the large cities where heretofore the play instinct was being stifled by conditions, which in the future planning of cities, is hoped to be avoided. The child life has been made more happy and has been prolonged; health has been greatly improved, and correct habits started, habits which through the child find introduction in the home. It goes without saying that the playground has come to us as a permanent institution, as permanent as the public school, and it remains but a question of the not remote future when this question of play will be taken under the wing of the public school system.

We, Americans, have the reputation of taking every new movement by storm, which is made possible by the generosity of philanthropically inclined citizens. The ease with which money is forthcoming in undertakings like the one in question, is often the source of envy on the part of foreign visitors. We have had with us since last spring a representative from Germany who came primarily as exchange professor, but who, besides, had the mission of studying all conditions pertaining to physical education, upon which question he is to report to his government. After an extensive tour last summer, during which he visited many playgrounds he expressed his amazement over the colossal sums of money lavished on playgrounds and on the other hand his disappointment over the disproportioned utilization of grounds and equipment. "Give us a portion of this great fortune and we will show you what is possible." Knowing the painstaking thoroughness of the Germans we may consider him justified in his claim.

Now, what was the general impression he received? It was that which every earnest and knowing observer must get, who is not blinded by size and equipment of playground or by statistical figures, which, if accurate, merely express the presence of so many individuals; namely that great sums of money are invested in huge grounds and elaborate equipment, which the usually incompetent corps of instructors does not know how to utilize.

There are in a number of cities men at the head of the playground movement who are devoting all their energy and best efforts toward the best results of their respective systems. The excellent endeavor of these men can be understood only by those who know under what difficulties they labor; difficulties which the municipality forces upon them in the form of appointed instructors, recruited from the ranks of ward politicians or from among war veterans. At best the service of these appointed men is that of a watchman who may stop fights among boys or see to it that the apparatus is not misused. Furthermore, the teachers selected from among the school teachers are seldom capable to render that service, which is needed for the ultimate success of the playground. Here then is a gap which needs immediate and serious attention. The playground movement is experiencing exactly what the gymnasium movement has experienced, namely that in establishing a department of physical education the attention of the institution in most instances was centered upon building and equipment while the management of it remained an afterthought. The reverse order of procedure would be the wiser one indeed. Give a thoroughly trained director of gymnastics just the space, void of all equipment, and he will produce far better results, than a man in a completely equipped gymnasium, who may only be instructor by accident instead of training. An equipment can be acquired gradually, but the beginning of a work needs at once the very best teacher and leader which money can buy. So in playgrounds I would say: a field first, then a good instructor, and last the equipment. This need not be the order where money abounds, but where economy is essential, it should last be applied to the engaging of the teaching force. It was this condition, due to lack of playground teachers which prompted the national association to appoint a committee at its congress several years ago, to which was assigned the task of outlining a normal course in play, designed to offer a broad preparation for playground supervision and teaching. Of this outline, which was accepted in Pittsburg last summer and which has recently been published in book form, Dr. Gulick says, that it is the most important work yet accomplished by the association. This outline, threefold in its aim, was launched with the great hope, that educational institutions would avail themselves of the opportunity of aiding in the preparation of the needed force of instructors for playground work. The three courses, separately set forth and with detailed syllabi are, first:

COURSE I.

A NOMAL COURSE IN PLAY FOR PROFESSIONAL DIRECTORS.

CONTENTS.

Introduction.

Syllabus One.	The Nature and Function of Play.
Syllabus Two.	Child Nature.
Syllabus Three.	Hygiene and First Aid.
Syllabus Four.	Social Conditions of the Neighborhood.
Syllabus Five.	The Playground Movement.
Syllabus Six.	The Practical Conduct of Playgrounds.
Syllabus Seven.	The Organization and Administration of Playgrounds.

COURSE II.

AN INSTITUTE OR TRAINING COURSE IN PLAY.

CONTENTS.

Introduction.
Syllabus One. Play and Childhood, Hygiene and First Aid, Social Conditions of the Neighborhood, and General Reading.
Syllabus Two. The Practical Conduct of Playgrounds.

COURSE III.

A COURSE IN PLAY FOR GRADE TEACHERS.

CONTENTS.

Introduction.
Syllabus One.
  I. Play and Childhood.
  II. Hygiene and First Aid.
  III. Social Conditions of the Neighborhood.
  IV. General Reading.
Syllabus Two.
  The Playground Movement.
Syllabus Three.
  The Practical Conduct of Play.
Appendix.
  I. Games.
  II. Athletic Tests.
  III. Organized Field Days; Play Festivals.
  IV. Industrial Work.
  V. Nature Study.
  VI. General Recreation.

These courses were presented ror the first time in full at the Harvard summer school last summer by Dr. Henry S. Curtis, who was one of the chief contributors to this outline and a member of the committee. He has been lecturing in various parts of the country since then, pleading for the adoption of these courses. This, in time, will give us a more representative corps of teachers.

In comparing our playground problems and conditions with those of Germany we meet two decided differences, which seem to simplify the management of playgrounds in Germany as compared with us in this country. The first difference lies in this: the child upon entering school is taught games suitable for its age and stage of development. This method goes on through school life, each class having its own play curriculum, taught and supervised by the regular class teacher, during a long recess period. We have here at once a condition decidedly favorable to the success of the playground. All children attending the playground can play the many ring games and also those of low organization. It merely remains, therefore, a matter of organizing various groups for various games instead of teaching them, as is necessary with us, where the children practically know no games. The teaching on the playground is difficult because we are not dealing with an organized class but rather with a heterogeneous crowd. The higher organized games or team games, not possible in most school yards are the only ones which are taught on the German playground. The other advantage which arises in favor of German playground conditions, and which accounts for the much greater attendance found in statistics, is to be found in the second difference of method, namely that the attendance of playgrounds has been made obligatory in a great number of cities. The success of this movement promises soon to make this a general ruling in all the schools of Prussia. Is it unreasonable to foreshadow the adoption of these two elements for the success of our cause? It seems to me that both of these, what I like to call advantages, tend toward bringing the playground into the general scheme of education. Let us consider the first.

Is it impossible to bring into operation this play curriculum in our schools? I can hear the reader say: "another fad." But we will let time decide that. The only difficulty I see, is the momentary inability of the teachers to instruct the pupils, which would necessitate the instruction of teachers first. This would be very feasible in cities where there are supervisors of physical education, who being prepared to arrange such a school curriculum could also meet the teachers for the necessary instruction. Other changes to make this possible are less complicated. A recess of from twenty to thirty minutes would have to be created to make a success of such a curriculum. Where the yard facilities are not such as to accommodate all the classes at one time, half of the number may be out, thus making two different periods. The disturbance created by those playing only annoy, at first, when the change from the old is still a novelty; but once the children know what is going on, their attention would be little distracted by the noise below. New school regulations in Berlin give a whole hour recess in the morning distributed as follows: 10 minutes after the first hour, 20 after the second, 10 after the third and again 20 after the fourth. If we are not willing to make this concession to the child, then we evidently are not yet convinced of the importance of play. The question of obligatory playground attendance for at least two afternoons, is one less likely to find adoption than the former. Still is such a demand really so remote? The first thought which naturally suggests itself in opposition is: Can forced play be of any value; must not play be voluntary in its pursuit in order to bring results? Let us briefly state some of the results attributed to and peculiar to play: Courage, presence of mind, self confidence, self respect, loyalty, initiative, alertness, respect for authority and obedience to law and above all general efficiency. Be it understood here that these virtues are acquired in play by deeds and not by admonishing, consequently should not to be considered already accounted for in other school work.

"Es bildet ein Talent sich in der Stille,
Doch ein Character in dem Sturm der Welt."

If, then, we are willing to grant this, and the general adoption of the playground seems to warrant this, it is but reasonable then to let such training be the privilege of all youth. There is just as little reason for not making play obligatory as there is great reason for obliging the child to the other compulsory forms of education.

If it had to become law to force parents to send their children to school, even though thousands already did so voluntarily, why then is it unreasonable to demand the same for the playground, where also thousands attend voluntarily, but still thousands are not being reached? Granted that those who are forced to go to play do not get as much out of it as do those who would go without being obliged to; have we not that same condition in the school? The ones who love to study and those who hate it? How many of those who feel forced to go to the playground will remain long on the list of children not enjoying play? It seems to me very few and these few, we will find to be the ones needing it most. During the school year we gain over many boys and girls who attended school reluctantly at first to the group of eager students, and in recent years we have made a special effort to aid the backward children. Where, then, is the ground for denying that compulsory playground attendance has a place in the general consideration of education? From the two obligatory play afternoons to optional attendance on the other days, is but a step. I feel safe in predicting that with a provision of this kind the present attendance would be doubled and the benefit per child greater. While the figures reported in the statistics of the various cities are large, they are in reality small, when we consider the total number of children in those cities. These two possible plans, for the promotion of the playground cause, I fear are at present far from realization, but it nevertheless behooves us to lend our effort in that direction. The normal courses outlined above can show the way. It is highly desirable that principals and superintendents of schools familiarize themselves with the suggestions offered therein. There is much need in the playground cause for well prepared, sympathetic men and women and the committee deserves appreciation of its work, an appreciation which will manifest itself best in a widespread application of their recommendations.

SARGENT NORMAL SCHOOL NOTES.

The commencement week of the school was made up as follows: senior class play, "The Rivals," class dinner held in the Hotel van Dome, theatre matinee, senior promenade given by under classes, and the final commencement exercises. The program for the latter was as follows:

1. Address—Dr. Sargent's "Competition and Culture."
2. Song .... Glee Club
3. Address—"Physical Training an Integral Part of Education"
   ....Wm. Orr, Deputy Commissioner of Mass.
4. Song ....Glee Club
5. Presentation of Class Gift.
6. Distribution of Diplomas.
7. Song—Glee Club.

Forty were graduated.

Dr. Weylan, an honorary graduate of the school of Columbia university, recently visited the school and addressed the students.

In the final demonstration a competition of wall scaling took place in which the junior team won out in the remarkable time of forty-five and two-fifth seconds. There were twelve on a team and the wall was 12 feet high, perpendicular and smooth. No artificial means were used.

During the last month all the students played tennis.

Dr. Sargent will have a paper at the N. E. A. convention to be held in Boston in July.

The year book, containing 65 pages, put in its appearance and gives a good resume of the year's doings in school.

The class of 1910 goes on record as starting a quarterly, the first number of which has just come out. Its purpose is to keep in close touch with the alumni of the school.

The class gift to the school this year is a drinking bubble, a device which will do away with the old communion cup.

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 1 8th St., New York.

—THE 14TH ANNUAL AMERICAN MARATHON, held under the auspices of the Boston Athletic Association on Tuesday, April 19, was the most successful run ever held by the Association. It is estimated that from 300,000 to 400,000 people viewed the race from the start in Ashland to the finish in front of the Club House. There were 196 entries in this race, and 171 starters, about 78 finishing. Distance, 25 miles.

It is a remarkable thing that with this enormous number of starters there was not a single accident of any kind. The following is the order of the prize winners:

	Time		
	H.	M.	S.
1. Fred L. Cameron, Amherst, N. S.	2	28	52 2-5
2. Clarence H. De Mar, No. Dorchester A. A.	2	29	52 3-5
3. James J. Corkery, Canadian Irish-American A. C.	2	34	25 4-5
4. John R. Roe, West End Y. M. C. A., Toronto, Can.	2	38	6 2-5
5. Michael J. Ryan, Irish-American A. C., New York.	2	38	42 1-5
6. John J. Reynolds, New Jersey A. C., Jersey City, N. J.	2	40	3 1-5
7. R. Eugene McCormick, Tecumseh A. C., Toronto, Can.	2	40	25
8. Edwin H. White, Holy Cross Lyceum, Mariner Harbor, N. Y.	2	40	50 2-5

PHYSICIANS' REPORT.

The usual examination of the runners was made at Ashland previous to the start. The weight before and after the race was taken, and of those finishing the weights before and after the race were obtained in 85 of the runners. In some instances the runner had food and drink previous to being weighed, so that in all cases the loss does not represent the full amount.

There were 85 runners weighed in at both points. Total difference in weight in these 85 runners, 562½ pounds; average weight lost per runner, 6 4-7 pounds; largest amount lost by any one runner (weighing 138 pounds at start and 121 pounds at finish), 17 pounds; smallest (100 pounds to 99 pounds), 1 pound; weight lost by winner, 2½ pounds; weight lost by second prize winner, 7½ pounds; weight lost by oldest runner (Peter Foley), 5¾ pounds; weight lost by youngest runner (Darius Allaise), 1 pound.

Blood was taken for examination before and after the race, but as yet the work is not complete. Certain observations were also made on the condition of the blood vessels before and after the race.

No contestant was prevented from starting in the race, and all that finished were in good condition. As far as can be learned there have been no serious results from this contest.

It was considered advisable not to let Peter Foley (who is 52 years old) start in the race, but a careful examination showed no reason to make this necessary, and the old gentleman's condition at the end of the race was perfectly satisfactory. This is all the more remarkable as he has now completed five Marathons.

The youngest contestant, 18 years old, did not finish. So far as could be learned none of the contestants used alcoholic stimulants during the race. A few years ago it was not uncommon for them to do so, but in most instances the runner soon became unconscious, and could not continue. The desirability of abstaining from alcohol during the contest has now been sufficiently impressed upon the minds of the trainers, and it is gratifying to see the much better condition of the runners on an average than when alcohol was quite freely employed.

A most astonishing fact in regard to this run is that the winner this year, as in most previous years, averages less than six minutes a mile for the 25 miles. This is quite remarkable from the physical standpoint, as most mile runs on cinder tracks with spike shoes are won in about 4¾ minutes. The winner of this Marathon averaged slightly more than a minute per mile more for 25 consecutive miles up hill and down.

It is to be noted that the men who have won and been well up in the race in previous years did not make good showings.

NEW FOOTBALL RULES.

The Interscholastic Football Rules Committee, after having held three sessions of two days each already this year, met at the Hotel Cumberland Friday, May 13, and, in ten hours of stiff work, finished its labors for the year.

At 7 o'clock that evening Secretary Hall of the committee met the reporters and gave them the results of the final work of the fourteen rule-makers. It remains now only for a special committee—consisting of Walter Camp of Yale, editor of the Official Rule Book, chairman; Percy D. Haughton, alternate for Crawford Blagden of Harvard, and Dr. Carl Williams, alternate for John C. Bell of the University of Pennsylvania—to codify the fourteen rules formally adopted at that session, and, under the power conferred, to provide adequate penalties. These fourteen rules were:

(1) There shall be two halves of thirty minutes each, divided into four fifteen-minute periods.

(2) There shall at all times be seven men of the attacking eleven on the line of scrimmage.

(3) The distance to be gained in three tries shall be ten yards.

(4) The player receiving the ball from the snapperback may cross the line of scrimmage anywhere, without going out five yards from the center.

(5) The player carrying the ball shall not be pushed or pulled in any manner by members of his own side, and there shall be no use of hands in any way by members of the attacking eleven on team mates.

(6) The onside kick shall travel at least twenty yards across the line of scrimmage before it may be recovered by members of the kicker's side.

(7) The forward pass may cross the line of scrimmage at any point, but the player making the pass must be at least five yards back of the scrimmage line when the pass is made. The player receiving the pass shall not be more than twenty yards in advance of the spot where the ball was put in play at the time the forward pass is recovered by him.

(8) Only the men at the ends of the attacking line of scrimmage and

the four men in the back field at the time the ball was put in play shall be eligible to receive the forward pass. A back, in order to be eligible to receive the forward pass, must have been at least one yard back of the attacking scrimmage line when the ball was put in play.

(9) A forward pass which crosses the line of scrimmage or a kick of any description must be made from a point at least five yards back of the scrimmage line.

(10) a—A player on the offense who has crossed the line of scrimmage may not interfere with a defensive player on a kick until the ball shall have gone twenty yards, nor in a forward pass until it shall have been caught, except in an actual attempt to catch the pass.

b—On a running play players on the attack may continue, as in the past to interfere with players of the defense.

c—Players on the defense, except when behind their line of scrimmage, may play as heretofore.

d—Players on the defense behind their line of scrimmage may use their hands only upon their opponents' bodies in order to get at the man with the ball, until the ball shall have advanced across a line five yards back of the scrimmage line.

e—When the ball has advanced across the said five-yard line players on the defense may play as heretofore.

f—Defensive players behind the line of scrimmage on a forward pass shall not in any way interfere with their opponents except in an actual attempt to catch the ball, nor shall such players, in case of a kick, in any way interfere with their opponents until the opponents have gone twenty yards beyond the line of scrimmage.

g—No player of the offense or defense while in the act of catching a forward pass shall be tackled, thrown, pushed, pulled, shouldered, or straight-armed until he shall have caught the ball and taken more than one step in any direction. Provided that any such interference which is incidental to a bona fide attempt to catch or intercept the forward pass shall not come within this prohibition.

(11) Any player with the ball crawling with the ball after the ball has been declared dead shall be penalized five yards.

(12) A man who may be removed from the game for any cause except disqualification may return once to the game at the beginning of any subsequent quarter.

(13) Players shall, at the moment of tackling, have at least one foot on the ground, under penalty of ten yards.

(14) On first and second downs in the case of an incompleted forward pass the ball shall be brought back to the spot where the pass was made, the play to count as a down and the point to be gained to remain the same. On the third down, in the case of an incompleted forward pass, the ball shall go to the opponents on the spot where the pass was made.

LOWELL ON FOOTBALL.

President Lowell of Harvard, in his attitude toward football as it is played, seems to be a shade or two more austere than he was not many months ago. From the abstract of his annual report it would appear that he is convinced that the belief all over the country that athletic achievement is more to be desired than intellectual attainment is not sincere; that when this belief is sincere it is analogous to the savage's idea that hunting is more honorable than husbandry; that the risks of football must be reduced, and that the system, unless it shall cease to be one for the training of "bands of gladiators," unless it shall become "the culmination of a general sport pursued by large bodies of undergraduates," cannot be a permanent institution.

If six or seven months can make President Lowell so much more rigorous in his attitude toward football, what will two or three years accomplish? Many were led to believe by his first official expressions on the subject that President Eliot's attitude toward football would cease to be that of the head of the university, that it would be materially modified if not reversed. Now it would seem that President Lowell may in time—and not a very long time—become a second Eliot on this question. At any rate, there is not to be the break that some persons contemplated. Football is going to be kept under the presidential eye—a kindly eye, no doubt, but one that will keep open and will see things in the whole composite clearly. President Lowell will ask that the situation with regard to football be improved, though he will doubtless be ready to help the game help itself.

The part of his statement to which football enthusiasts, particularly among the undergraduates, should give most attention is that in which he declares that the belief that athletic prowess is above intellectual attainment is not sincere. For if it is true that many students really do not believe what they seem to believe, and that they know that they do not believe it, President Lowell, in undertaking a reconstitution of realities, will find his work half done for him. He will find the reason of the students—as distinguished from the rah rah enthusiasm—already enlisted in his cause.

NOTES FROM NORMAL SCHOOLS.

NORMAL COLLEGE OF THE N. A. G. U., INDIANAPOLIS, IND.

—The seniors are visiting the gymnasiums of the high schools and observing the different methods of lighting, heating and ventilating, and of conducting classes, etc.

The field and track work taking place at the Turner Park is becoming more interesting as the students progress in the execution of it. They are looking forward with much interest to the "Athletic Meet" to take place in June.

The Board at its last meeting decided to hold the commencement exercises on June 16th instead of June 18th. HAZEL C. ORR, Secretary.

SUMMER COURSE OF THE NORTH AMERICAN GYMNASTIC UNION.

This year's Summer Course of the North American Gymnastic Union will be the first to be conducted by the Normal College. It will be held at Madison, Wisconsin, during the summer session of the University of Wisconsin, and will last from July 1st to August 2d. The course will be divided into two terms of 14 session days each, the first term beginning July 1st and the second July 18th. The subjects taught in each term will be completed in the 14 session days; but the work of the second term has been so selected that it will be a continuation of the work of the first term.

The Administrative Board of the Normal College has decided on the following subjects:

Theory and Practice of German Educational Gymnastics.

Gymnastic and Team Games.

Classic, Character, Folk, and School Dancing.

Field and Track Work.

Anthropometry and Physical Diagnosis.

By dividing the course into two terms of 14 session days each, teachers who do not care to spend four to five weeks of their vacation at summer school work, will be enabled to take part of the work, while others with more time at their disposal can take the entire course.

Particular stress has been placed upon the practical side of the course. This will offer excellent opportunities for Public School teachers to familiarize themselves with work they are expected to teach; while many new ideas will be suggested to the regular teacher of physical training.

All of the work (excepting field and track work, the practical part of which will be given on the athletic field) will be given in the gymnasium building of the University of Wisconsin.

A more appropriate and ideally adapted location for summer work than Madison could scarcely be found. The summer session catalog of the University of Wisconsin contains the following about Madison and its environment:

"The beauty, healthfulness, and temperate climate of Madison, the capital of the State of Wisconsin, make it peculiarly attractive for study and recreation in the summer time.

"This city of 25,000 is famous throughout America for its unrivaled natural advantages. It is beautifully located upon a number of gradually sloping hills between Lakes Mendota, Monona, and Wingra. The city has a justly celebrated series of fine drives which lead through shaded dells and over beautiful wooded hills along the shores of the lakes. The lakes are admirably adapted for rowing, sailing, swimming and fishing, and are equipped with passenger steamers and rowboats.

"The meteorological records of the United States Weather Bureau show that the summer visitor is justified in expecting favorable temperatures. The average daily temperature ranges from 62 degrees to 80 degrees, Fahrenheit.

"The city is on the lines of the Chicago, Milwaukee & St. Paul, the Chicago and North-Western, and the Illinois Central Railways. The prevalence of two-cent fares in the Middle West brings the city very near to the great railway centers, the fare from Chicago, for example, being $2.60. Milwaukee (fare $1.64) is a convenient point of access and departure via the Great Lakes.

"There are many people in Madison engaged in furnishing rooms and board to students, and their numbers are increased in summer by the fraternities and sororities which open their commodious lodges to students. Room and board together cost from $4 up."

Inasmuch as the Biennial Convention of the North American Gymnastic Union, to be held in St. Louis, closes on June 29, and as the summer course begins but two days later, it is expected that many of the graduates of the Normal School and College attending the convention will take advantage of this and also attend the summer course. This will be an excellent opportunity for the graduates of the school of the N. A. G. U. to meet once again and spend an enjoyable fortnight together.

BOOK REVIEW.

—The watchword of to-day is prevention of disease. Physicians, sanitarians and hygienists have, during the last two decades, been striving to educate the public how to prevent getting ill. With this purpose in mind, John W. Ritchie, Professor of Biology, College of William and Mary, Virginia, recently issued a small volume *"Primer of Sanitation,"* published by the World Book Company, Yonkers-on-Hudson, New York. This book, written in a comprehensive manner, is a very good text-book for the upper grades of the public schools and preparatory colleges. Indeed, it would be a blessing to the community if it would find its way into every family, so that parents may aid teachers, boards of health and sanitarians generally, in the prevention and spread of contagious, infectious and other preventable diseases. The book contains 200 pages, one hundred and eleven illustrations; is bound in cloth and sells at 50 cents, by mail 60 cents. It can be had from Mind & Body, Herold Building, Milwaukee, Wis.

—Another book of the New-World Science Series written by the same author and published by the same company as the book mentioned above, is *"Human Physiology, an Elementary Text-Book of Anatomy, Physiology and Hygiene."* The purpose of this admirably written book is, as the author says in the preface, to "study the human body and how to keep it in health." Beginning with the minuute or histological structure of the human body, the cells, the author goes on with the anatomy of the various organs of the body and their normal function and concludes with the causes of diseases by germs and other injurious substances and habits and how to prevent disease by fighting and avoiding their causes. The book has 362 pages and 157 illustrations, some of which are in colors to facilitate comprehension. The list price of this book is 80 cents, or 96 cents by mail, and can be secured from Mind & Body, Herold Building, Wis. It is a very good book, especially for the 7th and 8th grades in our public schools, and others who have had but little opportunity to study these subjects extensively.

—"THE TEACHING OF ELEMENTARY SCHOOL GYMNASTICS,, by W. P. Bowen, Professor of Education, Michigan State Normal College, Ypsilanti, Michigan. Published by F. A. Bassette Company, Springfield, Mass. 120 pages 6x9¼ inches. Price $1.10 postpaid. The volume is a theoretical and practical course in commanding, demonstrating, and criticising gymnastic exercises, along with a brief study of the general principles of the leading systems of gymnastics. To be had from Mind and Body, Herold Bldg., Milwaukee.

NORMAL COLLEGE OF THE N. A. G. U.,
415 E. Michigan St., INDIANAPOLIS, IND.
SUMMER SESSION.

The Summer Session of the Normal College of the North American Gymnastic Union will be held at Madison, Wis., during the summer session of the University of Wisconsin. Courses offered in physical training for public school teachers; post graduate course for teachers of physical training.

Complete Course consists of two terms running from July 1st to August 2nd. FIRST TERM July 1 to July 16; SECOND TERM from July 18 to August 2.

Write for circular containing full particulars.

MIND AND BODY

Vol. 17. **SEPTEMBER, 1910.** **No. 191**

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THE FOLK STREAK.*

If it be true that the body is a temple wherein we mysteriously harbour the mind and receive the spirit, it is very sure that each of these entities should draw to itself only that which vitalizes it.

No one part is independent of the other, for they are bound together in dissoluble union, so that, perhaps, the requirement of each part should minister to the whole. The spirit gains sustenance from its original source, but it also draws power from the progress of the mind and the capabilities of the body. The mind, absorbing to its destiny the deeps of knowledge, is yet illumined by the soul, and taught its limitations by the physical frame. The physical, straining towards the emancipations of perfect self-control, strength and grace, calls upon its marvelous locomotive possibilities to preserve that which was made in the divine image. Yet so frail is the body that to the mind alone it owes its direction and to the soul its purpose.

Thus, in the education of mind and body, we cannot exclude the element of the soul. Realising this, it is necessary to challenge the meaning of that which dawns on the educational horizon.

Of late a strange and luminous streak has flashed through the atmosphere of systems and revisions, and holds the public, lay and scholastic, as with a spell. It may best be described as the "Folk Streak." Folk lore assails the fancy, erstwhile songs are in each mouth, old-time dances fire the blood with crude compulsion. The fascinations of the long-ago world with its rustic arts, its sweet etiquette and its fiercer pleaesures, wake the ancestral echoes of the heart. Is it well?

The question is startling in its practical harshness. Slowly the mind is recalled from translucent dreams of "Merrie England" in its pastoral simplicities to the present and what these thoughts conserve to it. Rich in scenes of quaintness, vigour and measured lilt, such fancies court the superficial mind; but from within the pale of an ultra-civilization the seer quails before the evidences of superstition, which is often the real spell which awakes in the human heart the cult of bygone days. Is it wise to steal our standard from days darkened by primitive passions, or to cultivate in children the thoughts which emanated from the picturesque ignorance of the feudal masses?

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* **This article was published in the last number of "Physical Education," London. It shows that the incredible reaction against the dance-craze has also begun in England. Ed.**

Far be it from an exponent of Physical Education to decry anything which makes for physical perfection, but it is incumbent on such a one to ascertain if Folk-songs, Morris Dancing, etc., tend to this end from his scientific standpoint. It cannot be urged in defense of folk-songs that the subjects thereof are always pleasing, or that the music could not be revived in company with more enlightened ideals. Against this it will be argued that the music and words must harmonize in quaintness, and that to dissociate them would destroy this effect; besides—and it would be a long 'beside'—it appeals to the latent instincts which education has previously annulled. Again intrudes the question whether a return to former centuries and a study of their pursuits are timely stepping-stones in the evolution of education. If so it seems that to retrograde is to advance. By all means let that which is fundamental be preserved, but is not the training of youth in merriment replete with superstition a strange attribute in modern days?

That a prejudicial bias may not be suspected it is well to take a rapid review of Morris Dancing in its physical and psychical aspect. The principle of Physical Training is, briefly, the attainment of the greatest amount of benefit with the least amount of fatigue. It must be submitted that the opposite is the case with Morris-dancing. Fatigue rapidly follows in the wake of such exaggerated vigour of frame and it is doubtful whether the accelerated effort is compensated by as good physical result as ordinary training. It must be borne in mind that this question is under consideration from an educational standpoint and with regard to the effect on children mainly.

Morris Dancing, as we know, was originally performed by men and was a task suitable to the full strength of manhood, but it is doubtful whether it is not far too much to expect of the strength of a child. In upper-class schools, the highly cultured and often neurotic child of the present day is fascinated by the dancing, but has seldom sufficient stamina for such primitive exertion. The indiscriminate introduction of Morris Dancing into Elementary Schools is greatly to be deplored, for rapid movement and exhaustion of strength are by no means to be desired as an educational factor. It should be remembered that a large part of our city populations are badly nourished, nervous, and have a tendency to hereditary disease. Quick movements are bad for nervous or underfed children, yet who is to understand the need for individual exemption? Medical inspection avails little in the matter of exercise unless the doctor be acquainted with *all* comprised in the comprehensive term "Physical Exercises," which is marvellously seldom.

If one watches a child during the dances one discovers several things; firstly, that the constant changes and manœuvres of the figures, combined with the jangling of bells and stamping of feet are unconsciously straining his nerves; hence the frown which indicates no displeasure. Then one is struck by the constant monotony of movement, surely an offense to Physical principles. This monotony is common to all the limbs, but is mostly to be noticed in those gyrations of the arm by which the handkerchiefs are kept in motion. Of course this would not equally apply to the 'Stick' or 'Bagpipe' dances. Consequent on this constant repetition fatigue sets in and the head droops forward causing bad carriage. The movement of the legs is so rapid and so many steps are required to a measure that all personal peculiarities of posture are accentuated, instead of corrected. If corrected during tuition, the habits obtain during practice.

The aesethetic aspect is as important as the physical, and here testimony depends on the impression of the onlooker. Such an onlooker, however, seeing a first-rate exposition of Morris Dancing for the first time, was conscious of psychical discomfort. Crowding upon the mind came the consciousness of buffoonery, such as described by Scott in his historic "Abbot." The bounding figures became suggestive of the days when religious fanantics roused the passions of a mob. In chaotic succession loomed the horrors of the Revolution, and the unspeakable things of the Auto de fé. Yet more remote, the mind decried the Druids among their barbaric followers, urging to some such expression as this the votaries of their religion. It recalled to the memory those reasons for which Morris Dancing was originally abandoned, and the darker meanings with which unbridled thought endowed these representations. In a word, the uncontrol of a concourse of our contemporaries, in cultured surroundings and with a comprehension of science, is a fearsome thing.

If this be the view of an aesthete and extremist, it is but a view, nevertheless sincere, sudden and unexpected. As a possible intuition in the physical and psychical cause it seeks expression.

Now and here, when the infinite sadness of civilization has taught men a stern dignity of purpose and laid upon them the necessity of preparation for emergency, it is well to consider if we can with expediency return to the personal abandon of more rude and unlettered spirits.—WORKADAY.

GOOD HEALTH AND BUSINESS.

WILLIAM E. DAY.

One of the leading men of the day gave it as his opinion recently, that good health was the best thing for a young man to start out in life with. To have a good super-structure one must have a solid foundation, and good health is the basis upon which every man must build when he begins his life structure. The man who achieves distinction, professionally or in business, without good health is rare, in fact so much so as to achieve comment. Every young man should look to his health first rather than to his mental development. Wide-awake business men are now demanding certificates of good health from applicants for positions, realizing that only the best service can be obtained from those in good health, and the expense of "breaking" a man into a position becomes almost a total loss if the employe becomes ill. Slowly but steadily men are beginning to realize that good health and a fine physique are a valuable asset, are striving to keep themselves in the best possible physical condition by regular attendance at one of the gymnasium classes, and the cultivation of personal hygiene habits that tend for health. Beside the feeling of exhilaration that comes from properly directed exercise, the attendance at the gymnasium classes has a commercial value to the employer and the employe. A man in good health will not only be able to do his work in a manner more satisfactory to himself, but also give better service to employer than a man in poor health. Time spent in the gymnasium pays—bodily exercise profiteth.

NOTES FROM THE MEETING OF THE N. E. A., BOSTON, MA

July 4th to 7th.

Superintendent William H. Maxwell of New York City, in his paper on the "Economic Use of Education Plants," touched upon many phases of our work. The following is an abstract of his paper:—

"That a public school building may be used economically it ought to be used all of the time—summer and winter, morning, afternoon and evening—and it ought to be used for the greatest benefit to the greatest number of people.

"That school buildings in cities may be used economically they should be provided not only with outdoor playgrounds, but with large indoor playgrounds, with assembly-rooms, with rooms equipped for teaching carpentry and cooking, with classrooms furnished with moveable furniture and capable of being converted into open-air rooms.

"The activities which may be conducted outside of the regular school hours are evening schools, continuation schools from 7 to 9 A. M., and from 4 P. M. to 6 P. M. for children who have left school to go to work before completing the elementary school course; recreation centres and gymnastic classes in the evening for young working-people; lectures, concerts and debating societies.

"During the long summer vacation, school premises should be used for continuation schools for pupils who have failed of promotion in June, for manual training work for children who are compelled to reside in the city during the heated term, and for playgrounds. All high schools should be maintained throughout the year, summer as well as winter. Workshops and cooking rooms should be kept in operation every afternoon and on Saturday morning for the sake of those children who cannot get sufficient eye and hand training during the regular school hours, and for children preparing for the trades. In cities in which foreign immigrants settle in large numbers, summer evening schools should be established to teach English to foreigners.

"There are two conditions which are essential to the success of any activities undertaken in school premises outside of school hours:

"1. The activities should be under the direction of the school authorities and should be supported at public expense. No other agency has the means to conduct them on a sufficiently large scale. No other agency has the staying power to conduct necessary experiments over a series of years in order to determine a policy. No other agency has the power to secure the essential co-operation of the day school staff with those responsible for the outside work. No other agency is so likely to keep the playgrounds clear of their most insidious foe—political influence in the appointment of the directors.

"2. It is not buildings or equipment that makes a playground successful, but the persons in charge. If the director and his assistants do not sympathize with children, if they are not resourceful and inventive, if they cannot play all children's games, and if they have not the executive ability to vary the activities, so that physical exertion, repose, and recreative work have their proper time and rotation, the playground, no matter what its appointments or resources, will be a comparative failure. City children must be taught how to play.

"As a corollary to the second condition it follows that all normal schools and training schools for teachers should instruct our future teachers in the teaching of gymnastics, athletics and games."

In Tuesday's general meeting Dr. D. A. Sargent read a paper which we will print in our next issue.

A resolution was offered by Dr. Helen C. Putnam, chairman of the Educational Section of the American Association for Study and Prevention of Infant Mortality, of Providence, R. I., regarding the janitors of schools and their relation to health. The resolution was adopted as follows:

Inasmuch as sanitation of school premises is a large factor in health and education of children, be it

Resolved: That the National Education Association recommends that the training in the principles and methods of sanitary care of school premises be required of all janitors and superintendents of janitors; that provision be made for giving such instruction; and that where their appointments are through civil service examination it shall include examination in this subject. Be it also

Resolved: That a committee of five to contain at least two specialists in sanitation be appointed by the incoming president of the National Education Association to present at the next annual meeting of the association outlines of courses for janitors and superintendents of janitors in principles and methods of sanitary care of school premises and plans for instituting such instruction.

A committee was appointed to lay this resolution before the committee on resolutions of the N. E. A.

In the Wednesday meeting of the Physical Training section, two subjects were discussed.

Dr. Richard C. Cabot of Boston read a paper on "The Deeper Significance of the School Hygiene Movement." President G. Stanley Hall of Clark University, presented a paper on "Psychological Aspects of Physical Education." Both of the papers abounded in striking paragraphs, and in the discussion one of the speakers stated that "the worst thing that ever happened for education was the building of schoolhouses."

Dr. Cabot, after stating that schools are now paying much attention to the noses and teeth of pupils, took up the matter of ventilation, saying, in part:

"The air of many of our schoolrooms is often much more vitiated than that of crowded tenements. Tenement houses congestion is not yet compulsory, but schoolhouse congestion is. Those other compulsory institutions, the jails, are probably even worse, but we do not all have to go to jail. The remedy, however, is at hand, in the form of that terrible scourge—tuberculosis. We have learned that puny and tuberculous school children are benefited in outdoor schoolrooms. Soon we shall learn that children who are not sick may be kept from sickness by giving them pure air, instead of the dead, overheated air poured out of expensive so-called ventilating plants.

"You teachers know what health means as a means to an end. We physicians are inclined to look upon health as something beneficial for its own sake. The cost of hygiene in the schools will be brought up to you, but you can answer it by asking who has a right to commit children to an institution where they shall become diseased.

"Three things are bad for school hygiene: Heroism, creative effort and child-bearing. I urge upon you that you shall exercise your prerogative as guardian of the child's whole welfare. Hygiene is never an end. It is a means. Give the engineers, the doctors, the physiologists, a fair trial, but don't be hypnotized by them. They are all special pleaders, as I am. If you let the school hygiene problem go its own way, regardless of the subtle and more complicated problems of education, you must remember, there is much to be said on the other side. Hygiene is a splendid servant but a wretched master. I have seen many a man who was physically and hygienically perfect, but who was a perfect monster of immorality. To be acutely conscious of one's physical health is bad. One should not be thinking of his body, or of his soul. He should be thinking of his job and of his God. If gymnastics make us think of our body they are bad. If philosophy makes us think of our soul, it is bad. If athletics and philosophy lead us to live a better and a more abundant life, they are good for us. School hygiene is founded upon a recognition of the fact that compulsory education means compulsory disease, unless we so shape it that it means compulsory health. It is for you to try our these innovations and determine whether they mean life more abundant."

President G. Stanley Hall of Clark University in Worcester, spoke on the psychological aspect of physical education. He said:

"There is a wide complaint that in industry brain work and unskilled muscle work are unduly separated. The same division of labor is found in athletics between the manager or trainer who dictates regimen, etc., and the athlete who has only to follow orders. Thus we lose the best thing the Greeks who had no coaches gained, viz., freedom, self-knowledge, self-control. Their body training was only the preparation for philosophy. The best thing athletics can give is an inner oracle, bodily conscience, that teaches him what to do, how to do it, his own limitations, how to get most and best out of his body, when to stop to avoid fatigue and how to habitually live on a higher plane of health and effectiveness. Most of us habitually live at from 70 to 90 per cent of our maximal vigor and do not gain by the better body keeping that physical training ought to teach the fifteen years we should add on the average to our lives. Everyone's health problem is at root his own. He must make original investigations and forge up to the higher levels and not fall from grace between training. The true athlete should be an aristocrat of health and strength and learn how to keep himself up to his tip-top condition the rest of his life. This is the best college athletics can give

"Second, our faculties have been stupid and wasteful in dealing with athletics, trying to regulate it from without. They have made no serious attempt to use this tremendous interest for the highest culture. This they could do by courses on the best things that the history of physical training has to give. They should also teach the vast body of new knowledge concerning all matters of hygiene and training. The material is vast and a single spark of pedagogic genius here is greatly needed to kindle it and to bring it into vital touch with the great surging calentures of the diamond, the gridiron and the field. This data is still scattered, but brought together would be a veritable bible of the body for athletes, would instill honor, temperance, the simple life, the spirit of loyalty to even larger wholes than the alma mater and would make training a fine art based on science. The trainer kills honor by teaching to win at any price. The great motivation here for chastity is not utilized. The ideal academic athlete should be as superior to the average in soul as in body, else he is lop-sided and monstrous. He should be a gentleman with a higher code of honor and should feel it incumbent upon him to fit himself to be the progenitor of a higher type of man. Athletics without eugenics is incompete. These men ought to be nature's own nobemen, true aristocrats in a republic transmitting the raw ore of physical training into the gold of character, submitting it in higher fields. It is now up to educators to work out such a curriculum."

Dr. Rebecca Stoneroad, director of physical training in the public schools of Washington, D. C., opened Thursday morning's programme in the department of physical education, in Huntington Hall. The general topic for consideration was "Physical Education for Girls." In the course of her address Miss Stoneroad said:

"Much has been said and written concerning the physical education of boys during the periods of childhood and early adolescence. What should be done for girls has not received deserved consideration, probably owing to the fact that investigators of the subject have been teachers of boys rather than girls, so that fewer observations have been made and statistics collected concerning this sex. The whole subject is a complex one demanding experience with and a thorough understanding and appreciation of the growing girl.

"There is no doubt that girls, as compared with boys, are in even greater need of all the benefits which are to be derived from a wisely planned, thoroughly executed and complete course in physical education. It has been stated by an orthopedic surgeon in a hospital for children, that of those who apply in consequence of physical developmental defects, hardly more than five per cent are boys. In other words about ninety-five per cent are girls."

"Let us impress upon our minds three general requirements which are essential if we would have an adequate and scientific system of physical education. These may be briefly stated as follows:

"1. There should be an adaptation to the stage of physiological development.

"2. There should be an adaptation of the individual, taking into consideration his physical and mental condition as well as his personal needs.

"3. There should be an adaptation to the sex.

"We should strive to know the mind and soul of the girl, which requires rare discernment, great sympathy and appreciation. Her whole physical education may be summed up in what a girl at each stage of her development should be and what she ought to know how to do.

"The first demand is for health and vigor, for which reason, whenever possible, work should be taken out of doors with daily regularity and those exercises chosen which increase vitality and have to do with functional health as well as health of mind. These would include all the great motor activities of walking, running, throwing, skipping, jumping and, whenever practicable, climbing and swimming. We shall indeed have done a great work if we have instilled in the minds and muscles of the young a love for the pleasures of physical activity and have created a habit of exercise.

"Above all, there should be cultivated the hygienic habits of simple, deep breathing at all times, an erect carriage of the head and the thorax held at its greatest height permitting free play and proper functioning of internal organs.

"The second great need is educational in character and consists in the formation of right habits of action by proper training of nerve centres.

"The third need is for recreative exercises to offset the mental strain of school work, as this is the rock upon which many a young life has been shattered through injudicious teachers and ambitious parents; the healthy and normal course of development being hindered by long hours of sitting and poring over books.

"The fourth need is for corrective gymnastics for the purpose of overcoming certain postural defects which can frequently be traced to the school. The ideal exercise should give rise to pleasurable feelings which, through nerve stimulation, have a reflex effect upon the body. Besides the psychic effect, there is the favorable one upon the entire organism, influencing the whole group of organic functions, increasing the circulation and causing exhilaration.

"A few general propositions seem to me wise if we are to safeguard our girls from the physical evils resulting from overwork in the matter of athletics:

"1. All girls entering into competition should be examined by a physician and a certificate given stating the condition of heart, lungs, nerves and general health at that time, to the end that only those physically able can participate.

"2. Close supervision on the part of a woman instructor who knows the physical condition of the girl and will prevent her from participating in competition at times of temporary disability.

"3. Actual observations of the reaction of the individual occurring after a normal period of rest following unusual exertion, and a record of the same.

"4. Another physical examination by the physician made after a number of months of strenuous work to note what body changes may have resulted from the athletics indulged in.

"5. Personal instruction concerning the danger of excessive fatigue.

"It is true that any athletic sports carried to excess may result in exhaustion. But in strong competition the desire to win keeps the girl keyed up to the highest possible nervous tension, making her willing to go to the point of extreme fatigue all unknown to the instructor. Specially strong is the temptation if admiring friends are present to view her failure or success."

Among the methods by which the probability of exhaustion may be lessened, the speaker mentioned: A longer period of rest between rounds;

a shortening of the length of time for exertion; increasing the age and weight limit of the contestants; various methods of relays; making the events group events, instead of individual events; lessening the degree of effort necessary to score; private competition, not public. By the above methods it is possible to have all the fun, the pleasure in activity, the joy in effort and success itself, before the arrival of a condition of exhaustion.

Some interesting facts about the effect of physical training on girls were presented by Miss Laura S. Plummer, head of the department of physical education in the Boston Normal School. She said that for the purpose of making a just estimate of the effects of physical training upon girls of high school age, those most intimately connected with the question have been asked to contribute their experience. Statistics have been gathered from these sources; physical training teachers; high school students; mothers; physicians; and students three years in advance of the age under discussion, who have been asked to take a backward view.

The results of the tabulation of these statistics reveal an encouraging condition. An improvement in carriage, better breathing, and a greater love of outdoor activities, are reported. There is a happy absence of many ills, such as headaches and backaches, generally attributed to high school girls.

The majority of the replies show that the girls and their mothers definitely recognize the presence or absence of effects produced by gymnasium work. It is apparent, however, that the results of physical training should be even more evident to them in order that a conscious effort may be made to attain the desired effects.

There are at least four ways of making the physical training of the lower high school age more effective:

1. Requiring a lesson in physical training at least four times each week. (Two lessons a week is the usual rule.)
2. Securing, occassionally, the presence of mothers and family physicians in the gymnasium, and following these visits with conferences on the subject.
3. Reinforcing the gymnasium work with the formation of correct habits of eating, sleeping and outdoor activity.
4. Requiring for promotion a better physical condition, as shown by better carriage, better breathing, clearer skin and greater self-control.

The physical training of post-adolescent girls was discussed in a paper by Elizabeth A. Wright, director of the gymnasium at Radcliffe College. She said in part:

"The problems connected with the physical training of post-adolescent girls would be simplified if mothers and educators were more generally acquainted with the laws of growth and alive to the formation of correct physical habits during childhood. The physical condition of the average high school and college girl is only fair. The role of physical training is to provide stimulus and opportunity for increasing vitality, and for repairing the defects of faulty growth and incorrect motor habits, before it is too late.

"It is important that girls should be made to realize that the adjustment of the environment which results in health is of far-reaching biological significance—that physical training is a means toward the end of race development. Hence and especially of the practical application of its teachings, as a basis for physical training. All factors that make for efficient living must be considered in this connection, but emphasis is usually put upon the training of motor mechanisms. This is justified in view of the widespread effects, both physiological and psychological, that exercise has upon the whole system.

"The status of growth and development of the post-adolescent girl is suggestive in indicating what should be the nature of this motor training. A review of conditions at this period shows that there is less danger of strain than during puberty, but that too strenuous or prolonged work should be avoided. Play and formal gymnastics are both of importance. The former is of especial significance in providing training for heart and lungs, and as a means of character-building; the latter for corrective and educational purposes.

"The attitude of educational institutions is a potent factor in determining the interest and seriousness with which girls regard this part of their training. If it is to be effective students must be held as accountable for health, carriage, etc., as for academic branches."

FIELD DAY OF THE ST. LOUIS PUBLIC SCHOOLS.

Saturday, May 21st, 1910.

Calisthenic Exercises for Pupils of Grades III and IV.

Music:—March, 4-4 Time.

An introduction of 8 beats will precede the exercises and an interlude of 16 beats will be played between the parts, during which the pupils remain in the fundamental position.

PART ONE.

FIRST EXERCISE.

(a) March forward three steps and close heels at four	1-4
(b) Mark time and face left	5-8
(c) Two follow steps left sideward	9-12
(d) Mark time and face left	13-16
Repeat (a)-(d)	17-32

SECOND EXERCISE.

(a) Raise arms forward and toestep left forward	1-4
(b) Raise arms upward	5-8
(c) and (d) Return movements	9-16
Repeat (a)-(d) with toestep right	17-32

THIRD EXERCISE.

(a) Raise arms sideward and toestep left sideward	1-4
(b) Raise arms upward, clapping hands	5-8
(c) and (d) Return movements	9-16
Repeat (a)-(d) with toestep right	17-32

FOURTH EXERCISE.

(a) Raise arms backward and toestep left backward	1-4
(b) Raise arms upward	5-8
(c) and (d) Return movements	9-16
Repeat (a)-(d) with toestep right	17-32

4×32=128 Beats.

PART TWO.

FIRST EXERCISE.

(a)	March forward three steps and close at four	1-4
(b)	Mark time and face right	5-8
(c)	Two follow steps right sideward	9-12
(d)	Mark time and face right	13-16
Repeat (a)-(d).	Place hands on hips at 28	17-32

SECOND EXERCISE.

(a)	Straighten arms forward and stride left forward	1-4
(b)	Bend trunk forward, hands near foot	5-8
(c)	and (d) Return movements	9-16
Repeat (a)-(d)		17-32

THIRD EXERCISE.

(a)	Straighten arms sideward and stride left sideward	1-4
(b)	Bend trunk sideward left	5-8
(c)	and (d) Return movements	9-16
Repeat (a)-(d)	bending trunk right	17-32

FOURTH EXERCISE.

(a)	Straighten arms backward and stride left backward	1-4
(b)	Bend trunk backward and raise arms side upward with clapping hands	5-8
(c)	and (d) Return movements	9-16
Repeat (a)-(d)		17-32

4×32=128 Beats.

PART THREE.

PLACE BACK OF HANDS ON HIPS.

FIRST EXERCISE.

(a)	Step and hop forward left and right, bending other leg backward	1-4
(b)	Mark time and face left	5-8
(c)	Step and hop sideward left and right, bending other leg in front	9-12
(d)	Mark time and face left	13-16
Repeat (a)-(d).	Lower arms at 28	17-32

SECOND EXERCISE.

(a)	Raise arms fore-upward and stride left forward	1-4
(b)	Place hands on shoulders and lower head forward	5-8
(c)	Straighten arms upward and raise head	9-12
(d)	Lower arms forward down and return foot	13-16
Repeat (a)-(d),	stride right forward	17-32

THIRD EXERCISE.

(a)	Raise arms side upward with clapping hands and stride left sideward	1-4
(b)	Place hands on hips and lower head sideward left	5-8
(c)	Straighten arms upward and raise head	9-12
(d)	Lower arms sideward and return foot	13-16
Repeat (a)-(d)	lowering head right and stride right sideward	17-32

FOURTH EXERCISE.

(a)	Raise arms back upward and stride left backwrd	1-4
(b)	Fold arms in rear and lower head backward	5-8
(c)	Straighten arms upward and raise head	9-12
(d)	Lower arms and return foot	13-16
Repeat (a)-(d)	stride right backward	17-32

4×32=128 Beats.

INDIAN CLUB DRILL.

By KARL F. ROSS, M. D., Physical Director Turnverein Germania,
Los Angeles, Cal.

Exhibited at the Bundes Turnfest, held at Cincinnati, Ohio, June 1909.

1. Number of participants 16.
2. Music: "Schottische."
3. All Tactical evolutions performed while running.
4. Clubs are carried upon forearms during all running (arms bent at right angles, forearm horizontal, upper arm vertical) unless otherwise commanded during drill.

TACTICS—GROUP A.

Figure 1. The line angle march left 3 times, RUN—48 counts.

Figure 2. Ranks A, B, C, D, form to the left, RUN—4 counts.

Figure 3. Rank A, 4-4 wheel left.
Rank B, 4-4 counts forward and 3-4 wheel left.
Rank B, 4 counts forward and 3-4 wheel left.
Rank C, 8 counts forward and 1-2 wheel left.
Rank D, 12 counts forward and 1-4 wheel left, RUN—16 counts.

Figure 4. The column angle march left, RUN.
Rank A 1-4 wheel and 12 steps forward, B 1-2 wheel and 8 steps forward, C 3-4 wheel and 4 steps forward, and Rank D 4-4 wheel—16 counts. *(Repeat figures 3 and 4 3 times—96 counts.)*

Figure 5. Ranks 1-4 wheel left, RUN—4 counts.

Figure 6. The line 1-4 wheel left and face left about, RUN—16 counts. *(Repeat figure 6, 3 times.)*
Note:—Chain arms in front during wheels; lower same for facing.

Figure 7. Rank A 12 steps forward and 1-4 wheel left, B 8 steps forward 1-4 wheel left and 4 steps forward, C 4 steps forward 1-4 wheel left and 8 steps forward, D 1-4 wheel left and 12 steps forward, RUN—16 counts.

Figure 8. Ranks 1-2 wheel left, RUN—8 counts. *(Repeat figures 7 and 8, 3 times—72 counts.)*

Figure 9. The line 8 counts forward and members of rank A and B face left about, RUN—12 counts.

Figure 10. The ranks 4 wheel left about centre (x) and face left about, RUN—32 counts.

Figure 11. Repeat to the right facing right about, RUN—12 counts. *(Arms chained in front in figures 10 and 11.)*

Figure 12. Ranks D and A 1-4 wheel left and 4 counts forward, RUN—8 counts.

Figure 13. All ranks 4-4 wheel left, RUN—16 counts.

Figure 14. All ranks 3-4 wheel right, RUN—12 counts.

Figure 15. All ranks 8 counts forward, RUN.

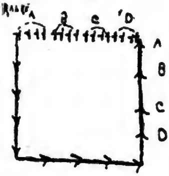
Figure 16. All ranks 1-2 wheel right and 4 counts forward, RUN—12 counts.

Figure 17. All ranks 4-4 wheel right, RUN—16 counts. *(Repeat figures 14, 15, 16—32 counts.)*

Figure 18. All to the centre of wheel or pivot FACE in position for club swings.

Tactics, group a.

Figure 1.



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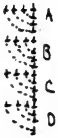

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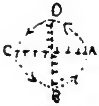

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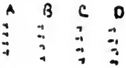

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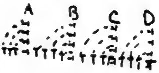

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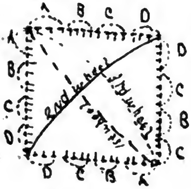

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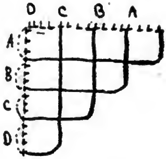

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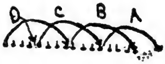

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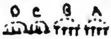
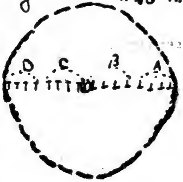


Figure 10. AND 11.



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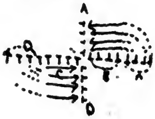

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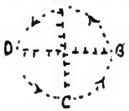

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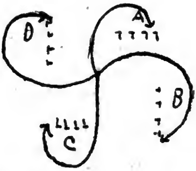

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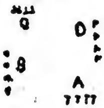


Figure 16

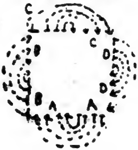
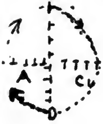


Figure 17



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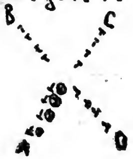


CLUB SWINGS—GROUP A.

Exercise 1.

(a) Swing 3-4 double arm circle forward and lower trunk forward 1.
(b) Swing 3-4 double arm circle backward and raise trunk 2.
(c) Drop clubs back of shoulders (vertically) and lower trunk backward 3.
(d) Double hand circle inward (back of shoulders) swinging clubs up to position, raise trunk 4.
(e) Hand circle inward with left arm back of shoulder and arm circle right with right arm 5.
(f) Hand circle inward with right arm back of shoulder and arm circle left with left arm 6.
Repeat (e) 8. Repeat (f) 9. The whole 32 counts.

Exercise 2.

(a) Swing left forward, left arm obliquely fore upward, right arm obliquely down backward, 1, 2, 3, 4, 5, 6, 7, 8. On heels face right about straightening left and bending right knee and double arm circle inward so that right arm is obliquely fore upward and left arm is obliquely down backward 9, 10, 11, 12, 13, 14, 15, 16. Face left about on heels, kneeling right, double arm circle inward so that left arm is bent horizontally over head, right arm obliquely down and back; hold 17, 18, 19, 20, 21, 22, 23, 24. In position stand 25, 26, 27, 28, 29, 30, 31, 32.

Exercise 3.

(a) Follow arm circles forward on left side, 1, 2.
Follow arm circles forward on right side, 3, 4.
Follow arm circles forward on left side, 5, 6.
Follow hand circles forward on left side of arms (outside) hands, shoulder high, order of swing *right, left, 7, 8.*
(b) Same, beginning to the other side 9—16. *(Repeat whole, a and b, 16-32.)*

Exercise 4.

(a) Double arm circle left 1. Lunge left forward swinging 3-4 double arm circle (down and back) right 2.
Replace left foot swinging 1-2 double arm circle backward (arms will now be forward) 3.
Bend knees and swing 1-2 double hand circle backward (clubs rest on forearms) 4.
Straighten knees and double hand circle forward on outside of arms 5.
Double hand circle forward (inside of arms) 6. Double snake circle forward (inside of arms) 6. Double hand circle forward (outside of arms) 8.
(b) Repeat (a) to other side, 9-16. Repeat parts (a) (b) 16-32.

TACTICS—GROUP B.

Figure 19. Numbers 1 and 2 of ranks A, B, C, D, face right and once around circle, RUN. Numbers 3 and 4 face left and once around circle, RUN. Note:—Raise arms obliquely side

upward, partners crossing clubs of inside arms, 32 counts.

Figure 20. 2's and 4's of ranks A, B, C, D, stand in place with clubs crossed upward and above head while numbers 1 and 3 of said ranks circle forward 2 and 4 respectively (1 circles 2) (3 circles 4) with inner arms raised obliquely side upward, outer arms obliquely side downward, 8 counts. *(Repeat circling in opposite direction 9-16) 16 counts.*

Figure 21. All face outward from centre of cross, each rank 1-2 angle march (45°) *once* and angle march left 3 times—16 counts.

Figure 22. Each rank 1-2 angle march left and angle march right and 1-2 angle march right, RUN—12 counts.

Figure 23. Run to positions for group B (club swings) RUN.

Tactics. Group B.

Fig. 19

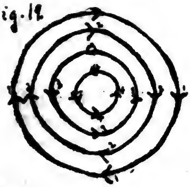


Fig. 20.

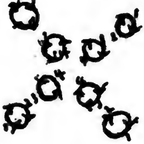
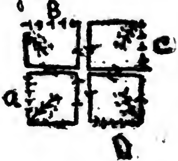


Fig. 21.



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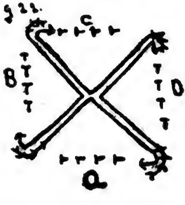

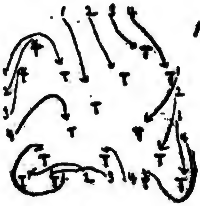

Fig. 23.

CLUB SWINGS OF GROUP B.

Exercise 1.

(a) Hand circle left outward with left arm behind shoulder, arm circle right with right arm 1.

(b) Same to opposite side 2.

(c) Hand circle (arm upward) left with left arm, arm circle right with right arm 3.

(d) Same to opposite side 4.

(e) Repeat (a) 5.

(f) Turn trunk left and double hand circle forward with left arm and backward with right arm (on outer side of arm) 6. Repeat (a) to opposite side 7. Repeat (f) to opposite side 8. The outer 2 members of each of the five triangles with inside arms obliquely outward and up, outside arms outward and down, lunge obliquely outward and back (inside leg) to middle member while middle member with arms obliquely outward and up lunges left forward and the anterior members of centre quadrent with arms outward and up kneels 9-12. All double arm circle inward, outer members changing knee bend to forward and outside leg, outer arm bend horizontally across head, and inside arm extended obliquely down and back. Middle members coming to position arms obliquely side downward, anterior members of middle quadrent kneel right and arms obliquely side downward 13; hold to 16. Repeat whole—32 counts.

Exercise 2.

(a) Hand circle left with left arm (inward) back of shoulder and arm circle left with right arm 1.
(b) Same to opposite side 2.
(c) Hand circle left with left arm (inward) back of hip and arm circle left with right arm (inward) 3.
(d) Same to opposite side 4.
(e) Repeat (a) 5.
(f) Turn trunk right and double hand circle left forward, right backward (outside of arms) arms raised forward 6.
(g) Repeat (a) to opposite side.
(h) Repeat (f) to opposite side 8.

Outer members of each of five triangles kneel on outer leg, inside arm bent horizontally above head, inside arm bent horizontally across front of body while middle members cross clubs upward above head and anterior members of middle quadrent kneel on left leg, clubs crossed upward above head 9; hold 10, 11, 12. Outer member kneeling on outside leg straighten inside leg obliquely side backward toward centre member bending body in opposite direction (obliquely sideward) inside arm obliquely side upward touching ends of clubs with outside member of triangle outside arm obliquely side downward while centre member of triangle lunges left forward. Double arm circle inward and arms obliquely side upward kneels left 13; hold to 16. *Repeat whole—64 counts.* (To be concluded.)

EGGS AS FOOD.

German doctors have been investigating the length of time that eggs are retained in the stomach. If it be granted that the length of time that food is retained in the stomach is a measure of its digestibility, lightly-cooked eggs are the most digestible; next come raw eggs, then buttered eggs, and finally hard-boiled eggs and eggs in an omelette. The nitrogen of hard-boiled eggs is absorbed to about the same extent as that of meat, but the fat is much better absorbed than that of meat. Another investigator showed that lightly-boiled eggs and raw eggs have a higher food value as part of a mixed diet than a corresponding amount of meat. (From Health, London.)

EXTRACTS FROM MEDICAL JOURNALS AND PHYSIOLOGIC AND HYGIENIC NOTES OF INTEREST.

By D. M. FERD. KROGH, M. D., Philadelphia.

DIET.

Some interesting observations on vegetarianism have been made by Dr. Karl Noorden, professor of internal medicine in the University of Vienna, and one of the greatest authorities on dietary in Europe. Against what he calls only "fleshless" vegetarianism, Professor Noorden raises no objection, but the strict vegetarianism, which excludes eggs, butter, milk, cheese, and the like he considers to be fraught with danger.

The "fleshless" vegetarian diet provides a sufficient supply of albuminous substance—that is, assuming that the average daily fare includes from two to three pints of milk, five to six eggs, and two ounces of cheese. And apart from its cheapness, this form of nourishment may be recommended, especially where there is any tendency to goutiness. In a few cases the sudden abstention from the generous meat diet which has perhaps been followed for years may produce bodily weakness, and in this event one must carefully consider whether the giving up of meat eating really promises so many advantages as to outweigh the drawbacks. But of the stricter vegetarianism which excludes all products from living animals Professor Noorden speaks much less favourably. Vegetables in the dry substance contain not more than 10 per cent. of "resorbent albumen." Therefore, to reach the very moderate amount of 70 grammes of albumen daily some six or seven pounds of vegetables would have to be eaten.

This lays an immense burden upon the stomach and intestines, which perfectly healthy persons may be able to stand, but quite frequently the organs give way, and sickness follows. In other cases the volume of nutriment taken is insufficient, and the whole system suffers accordingly.—(Physical Education, London.)

—A physician advances the theory that the distressing sensation of nausea has its seat in the brain, and not, as is usually supposed, in the stomach; that relief may be obtained by cooling the base of the brain. He claims to have tested this often and thoroughly in cases of sick headache, bilious cholic, cholera morbus and other ills in which the nauseau is a distressing symptom, without a single failure. He states that he once relieved the nausea resulting from cancer of the stomach by the application of ice to the back of the neck and base of the skull. The ice so used should be broken fine and the bits placed between the folds of a towel. Relief may be obtained by holding the head over a sink or tub and pouring a small stream of water on the neck.—(Health, London.)

—Here is a simple and available recipe—a medicinal bath for the nervously worn and those who cannot sleep o' nights. It was the prescription of an old physician. Take of sea salt four ounces, spirits of ammonia two ounces, spirits of camphor two ounces, of pure alcohol eight ounces, and sufficient hot water to make a full quart of the liquid. Dissolve the sea salt in hot water and let it stand until cool. Pour into the alcohol the spirits of ammonia and camphor; add the salt water, shake well and bottle for use. With a soft sponge dipped in this mixture wet over the surface of the whole body; rub vigorously until the skin glows. When nervous or "blue" or wakeful, do not omit this bath. The rest and refreshing that follows will amply repay the effort required to prepare it.

Boracic ointment.—An invaluable cure for sore eyes is a little boracic powder dissolved in warm water. When cold, bathe the eyes two or three times a day. Boracic ointment is a sure cure for gathered fingers, etc.—(Health, London.)

DENTAL CLINIC FOR SCHOOL CHILDREN.

This clinic is the outgrowth of experiments tried by Dr. Joseph S. Neff, director of the Department of Public Health and Charities, in Philadelphia. Recognizing the importance of dental conditions in affecting the general health, Dr. Neff has, during the last two years, been sending parties of children of the public schools to various dental clinics, where they have been treated practically free of cost, the city meeting the expense of materials in some cases.

Last year the children were taken to three clinics. Eight hundred and ten children had their teeth put in good condition by this means, but the number does not seem so large when we learn that no less than 6873 children were referred, as needing treatment, by the medical inspectors of the schools. In the cases of all but seven hundred for whom the city would care, it was possible merely to send the parents word that treatment was necessary; and in the large majority of cases, the families paid no attention to such notifications.

This year, only two clinics have been available for the children, and it became evident that some other means of providing for large numbers must be found.

After many urgent requests from Dr. Neff and other interested persons, Councils have finally appropriated sufficient money for the equipment of a dispensary, in which it will be possible to care for about 6000 children a year. The dispensary will be located in the City Hall, on the seventh floor. A committee of dentists has been formed in the interests of this work, and sixty of these have volunteered their services. As a consequence, it will be possible to keep the three operating chairs which will be in the clinic filled from 9 A. M. until about 3 P. M. Every care will be taken to guard against children whose parents can afford to pay even a little for dental treatment being admitted to the clinic.—(Fresh Air Magazine.)

THE MIND AND THE BODY.

More than twenty centuries ago Plato wrote: "The office of the physician extends equally to the purification of mind and body; to neglect the one is to expose the other to evident peril. It is not only the body that by its sound constitution strengthens the soul, but the well regulated soul by its authoritative power maintains the body in perfect health."

And still the Christian Scientists, the New- thoughters and the innumerable brood of quacks and fakirs who make the mind their special province, think, and they try to make the people think, that they have discovered something new, when they tell you that the mind has a great influence on the body. Of course it has; but not any greater—if as great—than the body has on the mind.—(The Med. Pharm. Critic and Guide.)

PLEASANTNESS A TONIC.

Don't be afraid of being pleasant. It cannot hurt you, and will be as good as a tonic for all you meet.

What though you do think yourself superior to most of your acquaintances, is it good taste to placard your belief by a freezing countenance?

There is nothing like affability to conceal one's family skeletons. A haughty manner is a direct bid for the rest of the world to rake up ancestral secrets that you thought buried.

Not everyone has the happy faculty of drawing the best out of others, but no one need ever be guilty of the vulgarity of consciously seeking to put them at a disadvantage.

Snubs have a way of coming home to roost.—(From Health, London.)

NERVOUS DISORDERS.

At the present day, when everyone seems to be suffering from nerves, it is more than necessary to try to cultivate reposeful habits. When you sit down to rest be still, and don't start at every noise. A long-continued noise might have a wearying effect on the nerves; but the little noices, which are over in a moment, hurt no one, and it is quite absurd to jump and start, as some people do, at them. Control of nervous movements act beneficially on the nerves themselves; whereas if the nerves are allowed to run riot, bodily health is impossible. Uncontrolled nerves are responsible for terrible disasters caused by panics in fires and other accidents, which often result in the loss of hundreds of lives. Giving way to nerves without a struggle for mastery over them is, therefore, not only very bad for oneself, but exceedingly selfish to one's neighbors. Everyone should strive to attain a quiet, even manner under all circumstances, and then when an emergency comes the chances are that they will be able to act with cool courage, even in the face of real danger, and be helpful to others, perhaps, instead of being a source of peril, as is so often the case.—(From Health, London.)

NORMAL COLLEGE OF THE N. A. G. U., INDIANAPOLIS, IND.

The junior class gave a reception and dance for the seniors Saturday, June 11, 1910.

The senior banquet was held in the palm garden Wednesday evening, June 15. The regular class day program was carried out. Mr. Alvin G. Herrmann acted as toast-master. Mr. Stempfel responded with the "College;" Dr. Fischer spoke of "Truth and Duty" and Mr. Rath talked on the "Efficient Teacher."

The closing demonstration of the year was given Thursday, June 16. It consisted of gymnastic dancing, free exercises, esthetic dancing, fencing, apparatus work and games. These were conducted by the seniors, showing the student's ability in directing gymnastic work.

The alumni meeting was held Thursday afternoon, June 16. It was decided to attempt to arouse the graduates' interest in the college and in the alumni meetings.

The commencement exercises were held Thursday evening, June 16. Dr. H. H. Fick of Cincinnati gave an address in German. Mr. J. R. H. Moore gave an address on "The Value of History to a Teacher of Gymnastics."

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NOTES AND COMMENTS.

—AMATEUR STANDING. The last biennial convention of the North American Turnerbund took a bold stand on the much discussed question of amateur standing. A long and interesting debate ensued when a motion was brought before the convention to allow the playground instructors in the Chicago playgrounds to participate in district and national festivals. The argument was that they really were no teachers; that they only showed the boys and girls how to do "stunts"; that "real" teachers did not recognize them as colleagues, etc., etc. Well, the tangle was about as great as that which now confronts the Amateur Athletic Union, and the other organizations dealing with amateur athletics. Some speakers said that as soon as one was a teacher in any phase of physical training work he was a professional athlete e. g., if one taught fencing he could not compete as an amateur oarsman, or as a runner. Others said that such a ruling was absurd. In fact, that it should be the endeavor of all gymnastic societies to get men employed in playgrounds, public schools and kindred places to join their ranks and exercise on the floor with clerks, teachers of other branches, artisans, etc. that if a society were prepared to go to a Turnfest it would be only just to take all these men along in their class of active Turners. They took the stand that a professional in any branch should be excluded from competition in that particular branch. That it would not be fair for one who devotes all his time to perfecting himself in any one branch, for instance fencing, to compete with men who had other things to do beside devoting their whole time to preparing themselves for one particular event. And again, they said that it is absurd to say that because a person is a teacher of gymnastics he should not be allowed to compete in a festival where all-around development was required. Attention was called to the well-known fact that, as a rule, as soon as any one left the normal school and began to teach, his gymnastic ability decreased. The debate was the most enlightening heard for many years and cleared away many cobwebs that obscured clear thinking. The result was the adoption of a motion whereby only professional athletics, i. e. persons who earn their living by exhibiting themselves in bodily feats are excluded from active participation at Turnfests. Vivas sequens!

WELL, WELL! Did you read Mr. Connelley's article on the Athletic Trust in the July Metropolitan? We wonder if such conditions could long continue if the athletic bodies of our country were managed by teachers, and if prizes of monetary value were abolished?

—THE SURVEY gives the following report on the conference on Child Welfare in Worcester, Mass., the end of June:—

Discussion at the second annual meeting of the Child Conference for Research and Welfare at Clark University showed that those on the program were by no means agreed upon a specific plan for child betterment. Thus, Owen R. Lovejoy and A. J. McKelway presented the work of the National Child Labor Committee and urged the establishment of a federal children's bureau, while Frederick P. Fish, president of the Massachusetts Board of Education, expressed his belief that some states have gone to an extreme in restricting child labor. He urged that children be permitted to work four and a half hours out of school, the employers using two relays of children in order to get a nine-hour day of work. This plan, introduced a number of years ago in England, is discredited there by both educators and manufacturers. At another session, social workers were obliged once more to meet the familiar arguments against organized charity.

One session was given up to the Worcester Child Welfare Conference and Surveys organized by President G. Stanley Hall of Clark. Fifteen university fellows and scholars have been engaged in the field work in cooperation with six conference committees on milk and infant mortality, playgrounds and play, dependence and neglect, delinquency, school hygiene and public recreation. Campaigns begun the past spring as a result of these surveys have given Worcester systems of playgrounds with paid supervisors and of pure milk stations with visiting nurses. Other valuable improvements have been quietly brought about and the movement has won enthusiastic support.

One of the most suggestive papers was on Play for Girls by Beulah Kennard, president of the Pittsburgh Playground Association. The nervous instability of women and their lack of poise, together with various qualities characteristic of adolescence, suggest arrested development and are probably due to the fact that from nine to ten years on most girls are greatly curtailed in all active forms of play. They are expected to be women several years before boys are expected to be men. Thus, she held, many so-called sex differences are due solely or largely to differences in training. The remedy is to give them as much freedom in play as boys have and to remove artificial restrictions.

David Blaustein of Chicago made a plea that in Americanizing immigrant children we preserve the best of their racial traditions, and characteristics through folk songs, games, dances, stories and industrial work. John Collier, secretary of the Board of Censors on Moving Pictures, New York, spoke on this subject. Dr. Helen Putnam, speaking on infant mortality, made a special plea for the accurate registration of all facts concerning it. Dr. Prince A. Morrow's subjects were venereal disease and eugenics. Patty Hill of Teachers' College, New York, brought out several ways in which the kindergartner will always be in closer touch with pupils' families than other teachers.

Members of the conference will receive the proceedings, of which the above is the barest sort of an outline of a few parts, and others may secure them by becoming members at $2 a year. The acting treasurer is Dr. L. N. Wilson, Clark University, Worcester.

—IN HER ARTICLE on Tangier, in Harper's for May, Mary Heaton Vorse tells how the street boys of the Eastern city gave the first sense of familiarity to the visitor from America.

"It was a boy—a common, or garden, boy; though a plum-colored djellab flapped around his bare legs in picturesque lines until he looked like a figure in a fantastic pantomime, he was not to be disguised, he was the "Eternal Boy." A Jew in black gabardine, black skull-cap chased him, saying things. The boy, as he ran, turned and made faces; also he stuck out a derisive tongue, he also shouted replies. One understood these replies too well to wish to understand more. There was nothing abstruse or Oriental about that boy; he was an intelligent street gamin of the purest type. He dodged the enemy neatly, and a friend joined him in a flank attack, and then another and another.

"There was no doubt about it. It was 'de gang.' It made no difference that they were dressed as for carnival, that they were of all shades and types, from straight-featured Arab lads to a black devil who looked as though he had come yesterday from Virginia—it was 'de gang' just the same, raising the same kind of lark that you may see them raising on Christopher Street any day when there's no plain-clothes man in sight. The Jew disposed of, they spotted us, and sat down on seats in the cafe and pulled out cigarettes from the big leather pouch that every male Moor wears by way of pocket. With grins they pestered the stranger for pennies, wheedled cigarettes from him, and pointed out gayly to the beggars of Tangier that a new bunch of Easy Marks had struck town. It was a brave and soul-comforting spectacle. It was a fact to cling to, in this strange and unfamiliar country, that left to himself the human boy is pretty much the same all the world over."

—FANTASTIC THEORIES regarding the use of colored underclothing to repel the heat in the tropics have been dispelled by a report made by the army board for the study of tropical diseases in the Philipines.

About 18 months ago 5000 suits of orange-red underclothes and a corresponding number of orange-red hat bands were sent to the Philippines. These were distributed so that one-half of a company should be clad in the new garments and the other in the ordinary white underclothes.

The army surgeons kept the closest watch upon the men, but they failed to find that the colored underclothes brought any relief from the tropical heat, although British army officers in India had reported that such clothing was much more comfortable in hot weather than white.

The medical board found that the colored underclothing, which, by the way, was unpopular, added materially to the burden of heat upon the system, which is a great cause of tropical deterioration. It is admitted that the orange red is a protective against the chemical rays of the sun, but the same result is secured by the khaki and the tan-colored campaign hat of the American soldier.

The experiments were conducted with the greatest care, frequent records being made of blood pressure, of loss of weight and of general condition. The results were the same in the case of either the white skin of the American or the brown skin of the Filipino.

PLAY AND PLAYGROUNDS.

THE MANGLED CHILD.

"And Cain said, Am I my brother's keeper ?"

It wasn't the fault of the motorman,
He went where the track is laid;
It wasn't the fault of the drayman,
For traffic the streets were made;
It wasn't the fault of the chauffer,
He stopped in the length of his car,—
These have rights that must be respected,
The same as our own rights are.

For every nine squares of city,
One square should be open for play;
No privilege this, but a birthright,
Not a century hence, but to-day.
The fault is with us, my brothers,
And as sure as we now draw breath,
The God of the child that is dying,
Will hold you and me for his death.

—John L. Shroy.

PLAYGROUND EQUIPMENT.

By Theodore A. Gross, Superintendent Municipal Playgrounds, Chicago.

(Read at the Playground Congress, June, 1910, Rochester, N. Y.)

The suggestions contained in this paper are particularly applicable to playgrounds of small area and in cases where limited funds prevent the installation of elaborate facilities and expensive apparatus, equipment and accessories.

For convenience, I have classified the equipment as facilities, accessories, apparatus, supplies.

By facilities is meant shelter buildings, play spaces, wading pools, sand houses, athletic fields, ball fields and such things that are for the convenience of the patrons.

By accessories is meant fences, surfacing, drainage, panting and such things that are essential to the fullest and best use and appearance of the playground.

By supplies is meant all base balls, bats and bases, basket balls, foot balls, stop watches and all kinds of hand apparatus essential in playing games, etc., including also tools and implements necessary in the care of and upkeep of the grounds.

I am not laying any stress upon the equipment involved in the supervision and administration of a playground, although it should be born in mind that the first and most important equipment is that of a competent supervisor or director.

These suggestions are applicable to all playgrounds of two acres or less, whether neighborhood playground, school playground, or a playground conducted by private organizations.

In laying out a playground it is important to reserve certain sections or play spaces for certain groups, such as boys over 10 years, girls over 10 years, older boys and young men. Children of both sexes under 10 years may be permitted to use the same section, but in order to effect a more satisfactory discipline and to guard against bullying and quarreling, the other groups should be confined to their own particular play space and each space equipped with apparatus and facilities best adapted to the needs, desires and play tendencies of the group that is to use it.

FACILITIES.

Every playground should have an administration building, a sheltered platform and sand box, an athletic field, a ball field, running track, wading pool and an open play space in which is erected all play apparatus.

If the playground be square shaped, the building, including the sand house and sheltered platform, should be erected in the center of the entire area with planting beds extending from the building to the fence lines at each end, dividing the area into two main play spaces. In the space in the front half of the grounds should be placed all the play apparatus; one half of this space should be reserved for boys and the other for girls.

In the space in the rear half of the grounds should be placed the athletic field equipped with the usual athletic and gymnastic apparatus, such as jump stands, hurdles, shot-put rings, jumping pits, horizontal and parallel bars, bucks, vaulting horses, flying rings, climbing poles, etc. This space can also be used as a small baseball field and if a running track be constructed around the edges of this field—slightly elevated—it forms a basin which can easily be flooded and used as a skating pond in winter. This portion of the playground should be reserved for the older boys and young men exclusively.

The wading pool and apparatus for the small children of both sexes under 10 years, should be erected near the building or field house.

The building or field house need not be large (25x40) or expensive, but should at least provide two toilet rooms (8x10), one shower room (8x10) with two or three showers, office (8x10) for supervisor and attendants, a storeroom (8x16) and by all means (on the second floor if possible in order to save ground space) there should be a large playroom (24x38) which can be used for kindergarten work, light gymnasium work, calisthenics, dancing, industrial work and other activities that require indoor facilities and where certain kinds of playground work can be carried on during inclement weather.

On one side of this field house, preferably the boys' side, there should be erected a sheltered sand box (10x16) with broad sides for making pies, etc., and on the girls' side a sheltered—concrete or wood—platform (16x24 outside) with fixed seats or benches around the other edges, where girls particularly can sit in the shade and do raffia work, sew or play games, such as jacks, sky-blue, hop scotch, skip the rope and other games peculiar to girls and which require a hard smooth surface.

ACCESSORIES.

A substantial fence, so that the playground can be closed at such times when deemed necessary. A playground without a fence may become a nuisance by encouraging or tempting children to remain out late at night, or by permitting it to be used without supervision after the caretakers have gone away.

The entrance gates should not be placed solely to make ingress convenient, but also to make exit somewhat difficult. You will find by doing this that there is much better discipline. Particularly boys are not so apt to do any mischief if they know it is hard to get away and the further the mischievous boy is in from the gate the better behaved he is.

The *surface* for the space where the play apparatus is erected should be covered with a sandy loam over which is spread a thin layer of finely screened cinders or torpedo sand. For the ball field and athletic field never use cinders but a mixture of clay and sandy loam. Turf or sod is desirable, even if it wears in spots as it keeps down the dust.

The playground should be well drained with the ordinary vitrified tile sewer pipe. If the ball field is not to be used as a skating pond it should be graded with the highest elevation at the center and the drains placed at the outer edges; if field is to be used for skating pond then reverse the grading and location of drains.

The playground should be provided with plenty of shade trees, shrubbery and flowers, particularly around the outer edges and in all spaces not devoted to the play interests. Narrow planting beds of shrubbery and flowers can be made to serve as a fence in separating the different play spaces. If thickly planted they are just as effective and add greatly to the appearance of the playground.

APPARATUS.

In selecting the apparatus equipment for a playground there are three important factors to be considered: The usefulness, durability and style of construction, and the proper distribution of the apparatus.

USEFULNESS.

All play apparatus selected should have some gymnastic or athletic value, that is, it should require on the part of the user some degree of physical effort in order to make use of it and not only to provide amusement. Apparatus that is too mechanical is not desirable because it increases the danger of accidents, easily gets out of order and is usually of little benefit as muscle makers. It is better to have the user do the work than to have the apparatus do it.

The degree of effort required and the element of danger connected with its use, should be the guiding factor in the selection of apparatus for the different sex and age groups that are to use it. Apparatus suitable for a group of boys 15 years of age may become dangerous or detrimental if same is selected for a group of girls 10 years old. Some apparatus—particularly for boys—must obviously contain a certain degree of danger to be interesting, for if there is nothing in the playground to dodge he will practice on the passing automobiles and if there isn't anything to flip he will use the street car. This point is more clearly explained in the list of apparatus recommended.

CONSTRUCTION.

Whether playground apparatus should be of wood or of iron construction is at present a mooted question. In Chicago we have a splendid opportunity of studying this problem as some playgrounds use wood while others use iron or steel in the construction of most of its apparatus equipment.

Here are some of the pieces of apparatus that are now being made of galvanized iron or steel and which are held by some to be the best style of construction for playground use. Horizontal, vertical and slanting ladders, climbing poles, parallel bars and teeter ladders; these pieces of apparatus are just the ones that should never be made of steel or iron, if for no other reason than for their obnoxious effect upon the sense of touch, as these particular pieces of apparatus come in direct contact with the hands in making use of them. If the least bit too hot or cold they are very disagreeable to handle and can only be used without that unpleasant effect a few months in the year. Another point against the use of iron or steel for these pieces is the tendency of metal to cause perspiration on the hands, thereby weakening the grasp, increasing the danger of injury from slipping and falling off. In the playgrounds where iron is used in the construction of these pieces of apparatus they are not used as much as in playgrounds where this apparatus is constructed of wood. I believe it is because the iron apparatus is not as pleasant to handle.

This of course does not apply so much to the frame work or standards for the heavier pieces of apparatus. These, if wood is used, should be made of heavy yellow pine, should be painted once every year and the top flat surfaces where rain water is apt to collect protected with a heavy tin or galvanized iron cover. The only bad feature of the wood construction is the tendency of wood to decay at the ground line because of the dampness which settles at this point. I am of the opinion that wood will outlast iron above and below the surface of the ground, but it is the space directly at the ground line where most of the damage is done. By swabbing hot tar around the wood at this point once every year during the hot weather while the wood is thoroughly dry, it can be preserved again as long. The use of iron or steel for some pieces of apparatus is of course indispensable.

DISTRIBUTION.

I do not believe grouping a lot of apparatus upon one large frame work is desirable because it creates too much congestion, increases the danger of accident by one piece of apparatus conflicting with the use of another, or it is used in every conceiveable way except the correct way. Boys especially will swing and jump from one apparatus to the other and use the frame work in playing tag or chasing each other about, interfering with those who desire to use it in the proper way.

Where each piece of apparatus is erected separately it eliminates the tendency to use the frame work for climbing upon and compels the patrons to use it in the way for which it was intended. By erecting the apparatus along the outer edges of the playground, leaving the open play field in the center of the ground, it distributes the patrons over a wider area, giving the director or supervisor a better opportunity for directing or teaching a particular group and of detecting from a distance any misuse of the apparatus, and lessens the danger of injury in coming in contact with the apparatus. If the space is to be used for skating in the winter months, all the apparatus will be out of the way, and an unobstructed field provided for this feature.

The following is a partial list of apparatus recommended for playground use and a general description of the construction:

GIANT STRIDES

(suitable for boys and girls over 10 years of age.)

The pole should be made of cedar not less than 12 inches in diameter at the base, not more than 16 feet in height, set four feet in the ground, well braced below the surface. The iron pole is not as desirable as the cedar because of its tendency to vibrate and snap off without warning. If an iron pole is used it should be reinforced with a small pipe on the *inside* rather than on the *outside* where the dampness can more readily get between the two pieces of pipe, causing it to rust. The revolving ball bearing disk or head piece should be constructed with the patented projecting arm pieces to which are attached the ropes which are suspended about 8 inches from the pole at the top, lessening the wear and tear on the ropes by preventing friction of the ropes and pole. The ladder ends should be at least 12 inches wide so as to permit a child to use them in a sitting position; they should reach to within 1 foot of the ground; the stride ropes with high, narrow ladder ends require too much exertion, especially for children to use.

SLIDES

(suitable for both sexes under 10 years.)

This is a very popular apparatus especially for the small children. The exercise derived therefrom, while not very strenuous, is very exhilirating and there is practically no danger connected with its use. The slide board should be made of 1¼ inch maple, 14 inches wide, preferably with two seven-inch strips fastened together with iron dowels to lessen the tendency to split. It is 16 feet long and the stairway about 8 feet high. To prevent the board from cracking and to insure a smooth surface it should be oiled with raw linseed or fish oil at least twice a week and turned upside down during rainy weather.

LAWN SWINGS

(suitable for both sexes, all ages.)

Although very innocent looking, these are the most dangerous things to have in a playground, if not properly constructed. The less mechanism the better. The uprights may be made of yellow pine, should not be over 15 feet high, the seats and footboard should be made of maple, the car or basket suspended from 1 to 6 inches above the surface of the ground.

CIRCLE BARS

(suitable for both sexes, all ages.)

The apparatus should be about 12 feet in diameter, the wearing parts made of hickory, the table revolving upon ball bearings and attached to the iron pipe support in such a manner as to eliminate obstructing braces underneath likely to hit children falling under the apparatus.

ROPES

All rope, whether for strides, swings, swinging rings or climbing, should be made of Manilla hemp, braided in three strands each strand being separately braided to insure strength and durability. Rope made of cotton or wood fiber should never be used as it breaks easily and is rough on the hands. For swings the rope should be attached to the frame by being looped arount a wooden block attached to an iron rod in such a way as to bring the wood to bear against the iron. It should be attached to the seat board so that the rope can easily be detached and reversed when it begins to show signs of wear where it is usually grasped by the hands.

LADDERS

(both sexes over 10 years.)

All ladders should be made of maple because of its strength and durability. The short grain of this wood eliminates the danger from splinters and slivers. The bottom of the ladder should be anchored to a concrete base about 6 inches above the ground. These should be painted rather than varnished because the pigment in the paint fills up the pores of the wood.

CLIMBING POLES

(both sexes over 10 years.)

These should also be made of maple for the same reasons as given for the ladders. The maple becomes harder from exposure and wears smooth. Its one disadvantage is the tendency to warp. I am not sure that even this is a disadvantage. Personally I think there is more fun in climbing a warped pole than a straight one. Of course it does not look as well as an iron pole, but we place them in the playground to be used, not to be looked at. The pole may be attached to the frame or standard by an "L" pin running through a hole in the upper end of the pole so as to bring wood to bear against the iron rather than iron against iron, which wears out more readily.

PARALLEL BARS

(suitable for boys over 10 years.)

The uprights may be made of wood or iron but the cross bars should be made of second growth ash or hickory, it has more elasticity, feels better to the touch and doesn't rust as do the steel bars. Care should be taken not to make them too wide, never more than 18 inches for adults, or 15 inches for children. If uprights are made of iron 3 inch pipe should be used to insure rigidity.

HORIZONTAL BARS

(suitable for both sexes over 10 years.)

The uprights may be made of wood or iron, the bar made of steel 1⅛ inches thick, and from 6 to 8 feet wide; steel is preferable because of its strength and the thin bar insuring a firmer grasp than does the thick wooden bar. Whenever a wooden bar is used it should be reinforced with a steel rod through the center.

VAULTING BUCK OR HORSE

(suitable for both sexes over 10 years.)

What to use as a covering for this apparatus is a problem. Leather is the best but too expensive for outdoor use, as it is easily ruined by exposure. Two layers of tough canvas, each layer painted and put on separately, the same finished with two coats of flexible gutta percha paint, is perhaps the most durable covering for outdoor use.

This apparatus should be constructed with four leg supports, rather than the single support type, because in missing the vault and falling head foremost the spreading legs of the buck or horse afford an opportunity to catch hold of thereby breaking the fall. A fall forward from the single support buck is very dangerous and often if high, results in fractured wrists and forearms.

For the jumping stands, shot put rings, hurdles and other athletic and hand apparatus most any of the standard makes will be found practical.

SUPPLIES.

A sufficient assortment of bats, baseballs, basket balls, foot balls, jumping sticks, vaulting poles, bean bags, quoits, etc., should be kept on hand, and of course the necessary tools and implements required in the care and upkeep of the grounds and equipment.

I have not attempted to designate the number of pieces of apparatus to be placed in a given area or the amount required for a given number of patrons, as this can more easily be determined by local conditions. However it is well to follow this principle: Where space or funds prevent the installation of a great variety of apparatus only such pieces as will accomodate a large number of patrons at one time, such as circle bars, rocking boats, lawn swings, giant strides, etc., and such apparatus as can be used in rapid succession, such as slides, etc., should be selected.

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—With the interest which the attempted assasination of Mayor Gaynor of New York City has aroused in this broadminded man, the following article which Mayor Gaynor wrote for the September number of the Pictorial Review will be of special interest to all teachers of physical training:

"The American child mav have too much candy, too much finery, too much freedom of speech in the family circle, and too much theoretical education, but it has never had too much attention from the government, national, state, or municipal.

"Take, for instance, the problem of the child the streets. We receive stacks of complaints. And I ask. Who has the greater right to the streets of New York, a child or an automobile? Within reason a child has a right to play in the streets. What is to be done with the active youngsters? Are they to be shut up in pens like cattle ready for shipment to the shambles?

"Most of the complaints that have come to my office about children have come from childless men and women. They have grown to hate themselves and everybody else, but even these ill-natured complaints must not be lightly dealt with. They are signboards pointing to the need of more room for children to grow up in.

"We have had too much educational refinement. By this I mean the refinement of the educational system itself. We want simpler courses of study. Most of the modern children are top heavy. There should be no study after school hours for the smaller children, and very little of it for the older ones.

"A lot of pressure has been brought to bear on me concerning the prize fight pictures. You cannot "sissify" the American boy. He will not permit it—and you do not want him to do it. I have never seen a prize fight, but I have no quarrel with the man who wants to see one. If pictures of a prize fight will teach a boy how to defend himself when called upon to do so, then I say let him see the fight pictures. The man who rails against prize fighting is the very man who would wallop his son well if the latter did not know how to defend himself when attacked by another boy. The man with red blood in his veins knows that blows such as boys will exchange will not kill, and the right blow rightly landed, may make a man of a boy who has had too much book learning and too little physical development.

"I feel the same way on the subject of dancing. I even receive protests against dancing in the public schools, dancing in the city parks, and the scheme of establishing municipal dance halls. Now, young people want to dance. It is a perfectly wholesome, natural desire. I wanted to dance when I was young. I did it and it never hurt me. The boys and girls of to-day want to dance, and, mark my words, they will dance.

"Therefore, it becomes the duty of every city to see that its young people dance in the right place. Do not imply the worst motives to the boys and girls who frequent dance halls. Give them the right sore of dance halls and just see them desert the wrong sort.

"And it is the same with moving pictures. I have been going to see moving pictures. They are all right. The harm lies in the way children go to see them. If they go with the wrong kind of company that is up to the mother. She ought to know who takes her children to moving picture shows, theatres, etc.

"We have twenty-seven playgrounds in the city of New York. They will do the children who can reach them a lot of good, but among New York's million or more of children they are—well, just a flea bite.

"And do you see the duty of the municipality to children is a big problem. It is not going to be solved to-day nor to-morrow, but it will be solved in time. We must move slowly and not make grave mistakes. All progress in government, sociology, politics, philosophy, and religion to be good must be the result of slow and careful growth. How slowly do our bodies grow! How slow is the growth of trees! How long was the Almighty brooding over His work?"

REPORT OF THE DIRECTOR OF THE GYMNASIUM AND BATHS.*

Brookline, Mass., December, 1909.

To the Gymnasium and Bath Committee:—

During the last year much progress has been made by our department, and I, therefore, take great pleasure in having the honor to submit my second annual report. Last year's report included much information concerning the buildings, grounds, equipment, courses of instruction and other newly established conditions. This will be incorporated in our descriptive pamphlets and need not be repeated here. I wish to call special attention to the steps taken in constructing our machinery of organization. (Webster's definition of organization is: "To construct so that one part may co-operate with another.")

The chief elements in a strong organization are:—

1. *Discipline.*

The success of any department depends upon good discipline. Learning to obey the law is an important part of education. Rules and regulations governing the use of buildings and grounds should be respected and obeyed with the knowledge that they are made for the best interest of all.

2. *System.*

Our business is planned and rules and regulations are made in such a manner that the machinery of the department may work practically automatically. We recognize the rule of cause and effect. This enables us to do our business with promptness and thoroughness, with fairness toward all. All may enjoy the same privileges, none more than another.

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* As municipal gymnasiums and baths are increasing in number the following clear-cut report will be of interest to many of our readers. Ed.

3. *Co-Operation and Organized Effort.*

Each branch of activity is given its proper proportionate value but exaggerated importance is carefully avoided. The relation of each part to the whole is clearly defined. The various branches are arranged so as to form the most desirable union, the value of unity in one department being obvious.

4. *Standards and Aims.*

The gymnasium and baths are considered primarily as educational institutions. This should be the unquestioned standard. They may be considered educationally in three ways: (a) Physically, (b) Morally, (c) Socially. The length of this report does not permit me to write in detail of these interesting and important considerations; but I am sure this educational value will be more generally realized by the citizens of Brookline as time goes on.

We desire that our buildings and grounds should be attractive and pleasing, the atmosphere surrounding all cheerful and friendly; the instruction a pleasing diversion from care and worry, and sports be indulged in for sport's sake alone.

THE DEPARTMENT.

GYMNASIUM CLASSES.

The regular schedule of classes has remained unchanged, as the present classification is proving satisfactory. Those who have attended regularly, since the beginning, January 20, 1908, are showing marked physical improvement. Interest and confidence increases with length and regularity of attendance. Much depends upon the individual as to how much benefit he or she receives. A whole-hearted, earnest, continued effort to improve all the opportunities afforded generally brings satisfactory results.

The director is planning a series of talks to be given before various Brookline organizations for the purpose of acquainting everyone with what is being done in the Gymnasium Classes. This will undoubtedly increase the attendance over even the present figures.

Appreciation is hereby expressed for the faithful and efficient work of the instructors and pianist.

THE EQUIPMENT.

The new gymnasium apparatus which was added to the equipment this year is much appreciated.

The new seating arrangement for gymnasium exhibition purposes is proving very satisfactory. It is arranged in tiers affording all spectators a full view of the gymnasium floor and can be put up, taken down and stored in the basement without difficulty.

Special apparatus has been placed in the Examination and Special Exercising rooms. This affords an opportunity for individual practice by those who can not conveniently attend a class or who desire special exercise.

HIGH SCHOOL.

Two hundred steel lockers have been provided for the use of High School boys. These classes now wear the regulation gymnasium costume which has a splendid effect, both upon the general appearance and the deportment. The various teams of the High School Athletic Association make good use of the Athletic Room for training.

NATATORIUM AND BATHS.

The large attendance at the Bath House gives evidence that the shower baths are being well patronized and the interest in swimming is becoming more general than ever.

As a healthful sport, beneficial exercise and worthy accomplishment, swimming is unsurpassed. Many pools are being built in connection with other gymnasiums showing universal interest. No doubt an era of great activity is before us in this branch of exercise. Last year the giving of free swimming instruction to Brookline children was placed in our hands. Formerly this was done by the school department. Both departments now co-operate and the valuable agency of the schools is used as before.

Lesson tickets are issued systematically to all the school grades in turn, but any child, whether in public or private school, is eligible for this instruction. The pupils are arranged in classes and assigned certain periods for instruction.

The work done for the small children during the summer months is most valuable and worthy. The generous service rendered volluntarily by those in charge deserves high appreciation. Dr. Augusta Williams has reported especially upon this.

A definite time has been set aside for water sports and swimming races. Tuesday evenings, after 8:30, the pool is used for this purpose. Notices are posted to this effect so that patrons may not be unexpectedly caused inconvenience.

LAUNDRY.

Attention is called to the splendid work done in the laundry connected with the bath house. Credit is due those employed in this work, and in the care of the buildings, for keeping a high standard of cleanliness and neatness.

OUTDOOR GYMNASIUM AND ATHLETIC COURT.

Last spring the gymnasium grounds were equipped with certain gymnastic apparatus. The landing pits were filled with tan bark. Six arc lights were provided by the Heating and Lighting Committee. A hygienic drinking fountain was provided by the Water Commissioners. The use of the grounds was regulated, a schedule being arranged for boys, girls and men and proper deportment required. Much interest is taken in these grounds during the spring, summer and fall, the whole proving quite successful.

The Athletic Court between the Gymnasium and Bath House is also made good use of for jumping, vaulting, weight putting, etc. All movable gymnastic and athletic apparatus is kept at night in a large rainproof box. Altogether this outdoor equipment adds greatly to the usefulness of the department.

GYMNASIUM ATHLETIC ASSOCIATION.

Competitive sports, properly supervised, are an important branch of our activities. They are, however, the cause of much criticism throughout the country. Not so much the sports themselves, but the abuses which may enter into them. If we are to recognize and maintain competitive sports, and I believe we should, the sports themselves and the business connected with them must always be carefully directed. The high standards which make up manly character should be interpreted in the spirit of the game.

An Athletic Organization is necessary in order to properly conduct Competitive Sports. The work of attending to the many details required for maintaining teams, conducting exhibitions and competitions and holding relationship with the Amateur Athletic Union, requires the machinery of a well organized Athletic Association, such as we now have.

The Gymnasium Athletic Association is therefore one of our most important branches. An organization in itself, it is a part of our complete system of physical education. It holds the same relation to this department as the college or school Athletic Association does to those institutions. The Association is even more essential to us than to the college or school as we are primarily conducting a department of physical education.

ORGANIZATION OF THE B. G. A. A.

Our Athletic Association is practically a Municipal Athletic Association, as any citizen in good standing may become a member. It thus gives everyone who is interested in such matters an opportunity to have a part in them, yet it compels no one to share unwillingly. The officers and Board of Directors are elected by ballot at the annual meeting. The Chairman of the Gymnasimu and Baths Committee is President, and the Town Treasurer acts as Treasurer. The Board of Directors is made up of representative citizens, including the Principal of the High School, a member of the Park Commissioners, and well known business and professional men of Brookline.

Each branch of the Association has its own officers and manages its own affairs. Committees on each sport are chosen by the Board of Directors. Being a part of the department, the Association is subject to final supervision of the Gymnasium and Baths Committee and the Director.

Nearly 300 senior and junior members are already enrolled.

At present the Association is represented by the following successful teams:

1. Baseball. 2. Boxing. 3. Gymnastics. 4. Hockey. 5. Swimming. 6. Track. 7. Wrestling. 8. Rowing (being organized.)

An attractively fitted up room in the gymnasium, known as the Association Room, serves as its headquarters.

AIMS OF THE ASSOCIATION.

The Association aims to conduct and maintain competitive sports upon the highest educational, moral and social basis.

The objects as given in the Constitution are: "The encouragement of systematic physical exercise and education and the promotion of athletic sports in Brookline and vicinity."

Interesting and instructive exhibitions and competitions are given throughout the year in the gymnasium and baths.

The lecture on playgrounds by Dr. Curtis of Washington in the Town Hall last November was arranged and paid for by the Association.

The following calendar events for the past year will show how active it has been at home. It has also been active away from home, the teams having won many honors on the track, field and diamond.

CALENDAR EVENTS FOR 1909.

January 16—Gymnastic and Athletic Exhibition.

February 24—Illustrated talk on Foreign Baths and Olympic Games.

March 9—Handicap High Jumping Contest.

March 20—Gymnastic and Athletic Exhibition.

April 22—Closing Gymnastic Demonstration by the Classes.

April 27—Handicap Shot Putting Contest.

June 5—Field day for Brookline Schools.

June 19—Banquet given to High School Baseball Team.

June 13—B. G. A. A. is close second to B. A. A. for N. E. track championship.

July 4—Town Games—Athletics, Swimming and Baseball.

November 17—Gymnastic and Athletic Exhibition.

November 24—N. E. ten-mile championship race arranged by Brookline. (Team prize won by Brookline.)

December 8—Lecture on Playgrounds.

December 11—Annual Road Race for B. G. A. A. Juniors.

December 14—Exhibition of Water Sports.

December 28—Water Sports and Gymnastics (A. A. A. S. Delegates.)

SUPPORT OF THE ASSOCIATION.

It is obvious that this work must have a proper means of support. It does not seem advisable to use funds from the regular town appropriation for maintenance and support of the gymnasium and baths for this purpose. There are two ways provided through which a suitable income is received. First: Through the initiation fees and membership dues. Second: By conducting one annual pay exhibition in the gymnasium and pool.

TO INCREASE THE MEMBERSHIP.

The Association is broad enough to include every one who is interested in any phase of its activities, and every one is invited to become identified with it. When the broad policy and democratic character of the organization is fully understood the membership will undoubtedly be greatly increased.

EXHIBITIONS, COMPETITIONS AND DEMONSTRATIONS.

These have created such a general interest that they have become established affairs. The events are selected and arranged so as to be both interesting and instructive to the large audiences attending. We only regret that the capacity of the buildings does not allow us to issue tickets equal to the demand. It has been found desirable to require that young boys and girls who attend be accompained by parent or guardian.

FOURTH OF JULY GAMES.

The games of 1909 were very successful, including base ball, track and field events and swimming contests at the reservoir. We heartily appreciate the action of the electmen in giving our department charge of the games. This should become customary as it is perfectly logical that the town department of physical education should direct afftirs of this character. Otherwise we are placed in an undignified position and marked as being incompetent.

I advised the construction of one more large float for use at the reservoir. Hereafter only two picked men will be in the boats provided for the safety of exhausted swimmers.

Benches or settees should be provided for women and their escorts who patronize the games on Cypress Street Playground.

WOMAN'S AUXILIARY.

Appreciation is felt for the splendid voluntary assistance rendered us by members of the women's classes. Refreshments were served from daintily arranged tables in the small gymnasium to the participants in the November exhibition. During the visit of the American Association for the Advancement of Science delegates the women served a very attractive luncheon and assisted in entertaining the guests. A delightful bridge whist party was held at the Hotel Beaconsfield in December for the benefit of the Gymnasium Athletic Association. The committee in charge presented the Association with a $125.00 check as a result of their successful efforts. The Women's Auxiliary of the gymnasium is now in process of organization. Such co-operation is indeed acceptable and pleasing.

The issuing of diplomas to those qualifying in certain tests of proficiency is being considered. These tests consist of fundamental physical activities such as running, jumping, hurling or throwing, swimming, climbing, bodily control tested by certain gymnastic exercises and in the principles of the various methods of self defense, e. g., boxing, wrestling and fencing. Personal qualifications, such as good deportment, faithful attendance, etc., also to be considered. These diplomas of junior and senior grades would be officially issued by the town. No doubt they would earnestly be striven for as the honor of possessing such a diploma of merit would not fail to be appreciated.

RECOMMENDATIONS.

This department should be known as the Department of Physical Education of the town of Brookline. I therefore recommend that immediate steps be taken for such official recognition.

Town of Brookline, Department of Physical Education, should henceforth be used on our records and on our stationery. This is highly desirable and the town could well take pride in such a broad and leading movement.

In connection with our outdoor grounds, I recommend:

First: That a part, if not all of the land extending to the railroad bridge be added to the gymnasium property. When properly graded this ground will be exceedingly useful for handball courts and other equipment. Closely connected with the buildings with locker rooms, baths and other facilities, this would be a most logical addition.

Second: That the grounds be inclosed with an open iron fence with a proper entrance and exit. This is essential, being the only means to assure proper supervision. If it is not possible to secure more ground, what we have should be enclosed as described.

Third: Well kept grounds promote good deportment and the reverse is true. The present ragged appearance of the grounds in front of our buildings is not in keeping with the fine buildings and splendid patronage. I recommend that these conditions be improved.

PLAYGROUNDS.

A start should be made in the development of the town's playgrounds and in organizing playground activities. Without discussing the subject at length I will make several suggestions. With the proposed addition to the gymnasium grounds and the whole suitably equipped, this outdoor gymnasium and athletic court may be known as the Gymnasium Playground.

The Cypress Street grounds should be developed into a good athletic field. Tennis courts might well be maintained on these grounds.

The Emerson grounds may be considered a children's playground, and should be equipped for that purpose.

These three playgrounds may form the central group in the Playground System.

The administration may be outlined in general as follows:—

(a) Equipment and care of grounds, including policing.
(b) Supervision of playground activities.
(c) Conducting exhibitions and competitions.

This may best be done by the co-operation of the Park Commissioners and this department.

The value of the town's playgrounds will depend upon how well they may be supervised. Instructors should be in charge of the grounds themselves and the whole system be under proper direction.

IN CONCLUSION.

Constructing this whole organization with its many branches has not been done without some difficulty. Complications arise when a new and larger organization is being built upon an old foundation. Methods which suited former conditions do not suit the new. Former precedent and old traditions are not easily overcome, no matter how good the reasons may be for changes or how sound the principles are upon which changes are made. Progress and growth is generally an obstacle race.

The gymnasium and baths are public institutions in the same sense that the public schools are public institutions, the use of which is carefully regulated to serve the highest purpose.

High standards, though difficult to realize and maintain, are being worked for diligently. We must be prepared to meet the criticism of not only the citizens of Brookline, but also of the foremost authorities on education and physical training everywhere, and be worthy of a place in the front rank among Departments of Physical Education.

Last year certain problems of organization occupied much time and energy. These being now settled more attention will be given to the further securing of public interest in our work and the further systematizing of the courses of instruction.

Your director has the welfare of all deeply at heart and is working to make Brookline's Department of Physical Education second to none in every respect. To this end the co-operation of all is earnestly desired and that a splendid future be assured; let us all feel a new inspiration and interest as we realize its high and noble purpose: To educate the youth to strong efficient citizenship; to strengthen the body so as to best serve the mind in every day toil; to teach that fairness to all, consideration for others, personal sacrifice for the good of the greatest number and a true spirit of democracy are standards to be striven for; that prejudice of race, sect or social class is narrow and should be eliminated and all be judged upon the ability to measure up to a whole-hearted, broad-minded, charitable, manly or womanly character. These are the standards which will cause this department to be an influence for good not only in our own community but beyond our own borders.

We most heartily thank the people of Brookline for their co-operation, encouragement and support, without which the present success would be impossible. During the coming year the standards and aims will be kept high, enthusiasm will not wane and good results will be sure.

Respectfully submitted,
J. LEONARD MASON, Director.

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

—C. F. Thomson of Los Angeles, Cal., won the all-around championship of the Amateur Athletic Union at Marshall Field, Chicago, Aug. 13, 1910. His score was 6,991 points, 400 less than that which captured the championship last year. The events in which each competitor had to compete were:—100 yd. dash, 16 lb. shot put, running high jump, 880 yd. walk, 16 lb. hammer throw, pole vault, 120 yd. hurdle race, 56 lb. weight throw, running broad jump, and 1 mile run.

Thomson scored his points as follows: 100 yd. dash, 832; shot put, 719; high jump, 614; 880 yd. walk, 792; hammer throw, 748; hurdles, 910; pole vault, 600; 56 lb. weight, 474; broad jump, 628; mile run, 674; total, 6,991.

—G. W. Gaidzik of the Chicago A. A. won the national fancy diving championship with 79 1-3 points, and L. B. Goodwin of the New York A. C. captured the 880 swim in 13 minutes 12 seconds, at Travers Island, N. Y., under the auspices of the New York Athletic Club, Aug. 13, 1910.

This seems to be a year of "Record Breaking." Marks which have stood for 20 years and more have been replaced this year, and some of them by a very decided improvement. Two of the greatest cuts in time were made by Melville Sheppard of the Irish American A. C. and Charlie Bacon of the New York A. C.

Sheppard lowered the record for 1000 yds., which has stood on the Record Book of the A. A. U., for 29 years, from 2 min .13 sec. to 2 min. 12 2-5 sec. This old record was made by Lon Myers at Travers Island Oct. 8, 1881.

Charlie Bacon lowered the colors of the formerly invincible "Al" Copeland in the low hurdles. The distance was ¼ mile, with 20 hurdles two feet six inches high. Bacon's time of 1 min. flat was the best performance in a similar event since "Al" Copeland created the mark of 1 min. 9 4-5 sec. in New York City on January 28, 1888.

Both men are in prime condition and it would not be surprising if at the end of the out-door season we find an entirely new set of records.

On Sunday, Aug. 15, 1910, Melville W. Sheppard broke three more running records, while Dan Ahearn, of the same club, broke the record for the hop, step and jump. Sheppard broke Tom Burke's 500 and 600 yd. and his own 550 yd. world's records. Burke's records stood on the books since 1896. Sheppard's time was as follows:

550 yds., 57 3-5 sec.—1-5 second better than Burke's.
550 yds., 1.04 sec.—1 2-5 seconds better than his own.
600 yds., 1.10 4-5 sec.—1-5 second better than Burke's.

Dan Ahearn covered the distance of 51 ft. 2 7-8 in. in the hop, step and jump, beating the former world's record of 50 ft. 1-2 in.

Mr. Vance C. Roberts of the Poughkeepsie,N. J., Y. M. C. A., was recently chosen to carry Yankee ideas of physical training to darkest Africa. Mr. Roberts will start shortly to revolutionize the methods of the South African Branch of the Y. M. C. A.

Seattle, Wash., has sprung something new on the advocates of physical training. We have all heard of "Gymnastic Exhibitions," "Folk Dancing Contests," Athletic Games," Etc., but who ever heard of a "Health Festival?" The program which consisted of fancy marches, flag salutes, songs, speeches, calisthenics, games and track events, was headed as follows:

"First Health Festival given by the Volunteer Play Leaders of the Public Schools, under the direction of the Department of Physical Training," etc.

From clippings received the "Health Festival" was a great success. We extend our congratulations to colleague Lepper on this new—would you call it—fad.

—The Clean Sports League of the Carolinas has been organized to popularize athletic sports and to improve the standard of athletic activities, so as to harmonize them with the high purpose of education and good citizenship. "Sport for sport's sake" is its motto.

In 1909 one hundred and nineteen professional players of the National League were suspended for rowdyism and other offenses. Undoubtedly many offences were overlooked. Similarly in amateur ranks there is a continual violation of rules and principles which reflects upon our boast of being true sportsmen. Amateurs too often do things they hope will not come to light. Frequently spectators and rooters are unjust and their actions not always in accord with what is known to be right. The Clean Sports League of the Carolinas is an educational organization composed of the leading colleges and Y. M. C. A.'s in the Carolinas.

It is endorsed by the

1. Southern Inter-Collegiate Athletic Association.
2. Athletic League of North America.
3. South Carolina Inter-Collegiate Athletic Association.
4. Carolina Federation of Y. M. C. A.'s.
5. Charleston Amateur Athletic Federation.

The following adopted code of ethics is simple—fair to the individual, to the large as well as to the small colleges, schools or other organizations. It appeals to the manhood in man, and all lovers of clean sport are asked to support it.

CLEAN SPORT PRINCIPLES.

1. Both the home team and the home town should treat the visiting team as a guest.
2. Both players and spectators should recognize good plays of the visiting team by suitable cheering.
3. Players should play fair and be good losers.
4. The umpire and the referee have difficult tasks to perform. Spec-

tators should accord them their moral support. The players should extend them hearty thanks as they leave the field.

5. Condemn all use of profane language on the field.

Lists will be circulated in every town in the Carolinas, and every man and every boy big enough to swing a bat is requested to add his signature, with the understanding that an honest effort will be made to live up to these principles. Such action will add greatly to the pleasure and dignity of athletic activities of the Carolinas.

It is four years since football was abolished at Columbia, and there are now no undergraduates left there who have known or seen the demoralizing influence of intercollegiate football. It is the unanimous testimony of Columbia professors that the autumn weeks have now, for the first time, become quiet, orderly, and abundant in work. Previously serious academic work began after Thanksgiving. Football dominated everything until that day. The tone of the student-body has improved, and now on the university exercising ground, South Field, there may be seen every afternoon hundreds of young men actively engaged in sports, in games, and physical exercise, where, during the football period, there were but twenty-two rushing and tearing at each other, while a few score or few hundred stood on the side lines watching and cheering.

Football makes athletics impossible. Athletics cannot flourish until football is gotten out of the way. The rational and regular participation in outdoor sport by hundreds of students is an end devoutly to be wished for. It cannot be obtained, however, so long as the body of the whole student interest is focused on the gladiatorial struggle between two trained bodies of combatants, leaving to the students as a whole nothing to do but to watch. The alternative is between the real and the vicarious. Football for the mass of American students is a vicarious participation in athletics.

It is deplorable that Columbia's example has not been followed by other large institutions. President Eliot talked and thundered against football, but Harvard did not uphold him. Other college presidents have gone to the length of defending football as a moral agent. One hardly knows how to deal with men who take such an attitude. Columbia has gained for itself a proud pre-eminence by an act of conspicuous moral courage, good sense, and high intelligence.—From "Effects of Football Reform at Columbia," in the *American Review of Reviews.*

BOOK REVIEW.

—"PLAY" by EMMETT D. ANGELL, comprising games for the Kindergarten, Playground, Schoolroom, and College. 190 pages 5½x7½ inches, illustrated. Published by Little, Brown & Co., Boston. Mailing price $1.65.

The twenty to thirty pages preceding the description of the games themselves are interesting in many ways. We do not, however, agree with all the writer says when he compares the effects of gymnastic training, to training by means of games. Reading what he says, one might imagine that these two are antagonistic and had no relation with one another. A system of gymnastics without games is not complete. The author also speaks of German gymnastics. If he will read up the history of German gymnastics he will find that the earliest teachers of gymnastics in Germany used more games in their teaching than they did other forms of motor training. All this talk about the difference between gymnastics and games reminds one of the argument if soup, or steak, or dessert is the best meal. They all belong to a square meal. The teacher who does not know how to arrange a lesson containing all forms of physical training; i. e., tactics, calisthenics, apparatus work, track and field work, dancing, etc., in correct proportions, ought to go to some decent normal school and study physical training materials. Such a teacher always reminds one of a physician graduated from "Wayback University" who hasn't his materia medica at his fingers' ends and who must use patent medicines for his patients. In the physical training world these patent medicines are found in the form of drills, folk dances, breathing exercises and like "cure-alls" that crop up with never-ending regularity. Games, we repeat, are an essential part of physical training, and are in no wise antagonistic nor substitutes for other forms of gymnastics. After this digression we may add that the games described in the book seem to be the result of practical experience. Teachers looking for "playable" games will find the book of great use. To be had from Mind and Body, Herold Building, Milwaukee.

—"OPEN-AIR SCHOOLS" by LEONARD P. AYRES, Ph. D. 171 pages 5¼x7¾ inches, illustrated. Published by Doubleday, Page & Co., New York. Mailing price, $1.35.

Since the opening of the first open-air schools in Charlottenburg, Germany, the movement to keep school children out in the open air for the greater part of the day has been gaining force. Many cities that wish to know what has been done elsewhere, and how the different cities that have established open-air schools have gone about it, what the results have been, etc., will find the information they are looking for in this publication. The book can be recommended highly to all teachers and parents. To be had from Mind and Body, Herold Building, Milwaukee.

—GENERAL BIOLOGY, by JAMES G. NEEDHAM, Ph. D., Ass't Prof. of Limnology and General Biology in Cornell University; with 64 practical studies, 287 text-figures and 9 portraits. The Comstock Publishing Co., Ithica, N. Y., 1910; 542 pages; price $2.00, postpaid $2.16.

"This book offers a series of practical studies of biological phenomena for the guidance of the general student. It is a guide intended to assist the student in acquiring for himself some real knowledge of living nature."

As teachers of physical training we acquaint ourselves with anatomy and especially histology to enable us to understand the functions of the various parts of the human body. But our studies in these subjects would be greatly enhanced by a previous knowledge of biology, or the phenomena of living nature and the laws governing it. This study is fundamental to the study of anatomy and physiology and, as we teachers of physical education are guardians of the well-being of mankind and hope to participate in the effort of man's elevation to a higher standard physically, mentally and morally, biology is of importance to us.

We can recommend Prof. Needham's book, as he treats the subject in a comprehensive manner. It is both interesting and valuable.—Dr. K.

MIND AND BODY

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PHYSICAL EDUCATION IN ITS VARIOUS PHASES.

ELEMENTARY SECONDARY AND HIGHER.

By D. A. Sargent, M. D.*

This is a large subject to cover in a twenty minute paper, but I hope to be able to consider some of the various phases of physical education in the elementary and secondary schools, and to suggest some ways in which the college may further its own aims by improving the physical condition of those who come to it. My paper will be confined to the physical education of boys, since that of girls is considered in another department.

Since the average man as we see him to-day is the resultant of all the varied physical activities of the past, the problem before us is how to preserve the development already attained, and to add still further to man's possible perfectibility. It is a recognized fact that the physical activities which, in the past, made for this attainment have been superseded by the inventions of machinery, the use of steam, electricity, etc., taking the place of muscular effort. Moreover, the concentration of population in large cities, and the great multiplication of human interests, add to the complexity of the problem. These social and economic changes have brought about a minute division of labor and greatly modified the developmental value of man's occupations, and the healthfulness of the environment in which he lives and works.

The complications growing out of our present condition of affairs, are forcing the problems of the farm, the shop, the factory and the home upon the schools and colleges which must be prepared to meet them. What part should physical education play in this important movement? Assuming that there is a mental and a physical side to education, although they are mutually dependent, the larger part of the elementary school life should be given over to physical education. Healthy children of six or seven years of age when left to themselves will expend an amount of energy in their daily physical activities equivalent to that required in a continuous walk of nine or ten miles. This amount of muscular movement is necessary for the development of the normal child of the elementary school age. The best kind of exercises for children of this age are those free and spontaneous movements of trunk and limbs which they naturally enjoy and indulge in, such as bending, twisting, rolling, jumping, running, balancing, tumbling and climbing. These simple exercises should be frequently supplemented by more formal movements in imitation of primitive occupations such as reaping, mowing, rowing, sawing, etc. Then the dramatic plays such as Indians, cowboys and soldiers furnish a large amount of physical activity, as do the games of hunting, shooting, etc. The so-called "constructive" plays, the making of such things as huts and forts, and the digging of caves and wells, all require considerable physical as well as mental effort and are in a way highly educative. In order to produce the best physiological results, the periods of physical activity should be frequently interspersed with periods of rest. And frequently the best kind of rest for a normal child is a change of organic activity. Prolonged attention or prolonged maintenance of bodily positions either sitting or standing should never be expected or required. In view of the narrowing and deforming effect of many modern occupations,—due to the limited employment of the mental and physical faculties, I believe that it is of the utmost importance that children of both sexes, as early as 8 to 10 years of age, should be given a series of more or less formal gymnastics as a means of physical improvement to fit them for future labor. This is necessary not only to correct the evil effects of posture, etc., in the school room, but also to develop those great fundamental groups of muscles on the back, shoulders and chest, which are so little used in school life and in modern education. There is no better way of developing these important parts of the body than by the so-called heavy gymnastics and the time to begin the practice of these exercises is when children delight to climb, and hang and swing, and do so with exceptional agility. To postpone these exercises to a later period, on the ground that children from 8 to 10 years are not strong enough to take them is a great mistake, and one for which similar work attempted later in life, seldom compensates. In speaking of the elementary phases of physical education, I have intentionally confined myself to a consideration of the large, simple movements of the trunk and limbs, because it has been found that the development of these parts at this time of life is of fundamental importance. This is an age, however, extremely susceptible to sensory and mental impressions; thus there will come to them naturally all the knowledge that children absorb through observation, imitation, and experimentation with their toys, plays and physical activities. Greater efforts should be made to teach, in the same way, the elements of language, music, drawing, arithmetic, geography and some of the sciences.

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* Read at the July meeting of the National Educational Association in Boston.

The secondary school period from 10 to 18 years of age, is the most important of all for physical education. These eight years are accompanied by many mental and physical changes and no simple series of exercises will meet the demands of both the youngest and oldest of this group. We have seen that normal children of the elementary school age like young animals delight in activity for its own sake. But at the beginning of the secondary school age there is a transition in interest from the control of the body and activity for its own sake, to interest in the control of environment and activity for the end's sake. This transition of interest may be a source of mental, moral and physical improvement, or it may usher in a train of evils. The changes that are taking place in the nervous system at this time make it necessary to modify the methods of physical education to meet them. Exercises requiring fine muscular co-ordinations, the development of keen muscular sense, and nice powers of bodily adjustment may well be introduced now. It is the period most favorable for laying the foundations for future skill and expertness in gymnastics and athletic sports. It is also the period when the neuro-muscular habits are formed and fixed, and when the discipline of the daily drill counts for so much; when conduct is moulded and character is fixed. There is no better way of accomplishing these high aims than through organized play, educative gymnastics, athletic sports and competitive games. The value of graded plays and games has been so thoroughly considered elsewhere* that I will not linger here, but will go on to certain phases of physical education which, it seems to me are not so well understood, although very important.

In order that physical movements may be made educative it is of vital importance that they be executed correctly and according to some ideal standards. The mere careless effort of bodily activity may be of some hygenic value, but such efforts are not strictly educative.

This is the school age when boys should learn to run, jump, swim, row, box, fence, etc., as individual accomplishments. They must not only practice them assiduously, but they must know how to expend, for the best results, the required strength, speed, skill and precision. It is not expected that any one youth shall excell in all these sports, but I wish to emphasize the fact that an important end to be striven for in the practice of these physical accomplishments should be grace, poise, accuracy, order and beauty of form and execution. This applies equally well to various kinds of light and heavy gymnastics. The movements with Indian clubs and wooden wands, the exercises on the rings and bars, lend themselves to the execution of graceful, pleasing motions requiring perfection of structure and harmony of function. The same laws as to beauty, order, harmony and rhythm apply to these modes of expression through activity as well as to other arts, and their practice depends upon the same mental processes and ethical principles. If a boy should become an expert in any athletic or gymnastic performance he would not only conform to the laws of animal mechanics, but to the standards of applied ethics and esthetics as well. Apply this principle to all of the boys physical activities, and it will be seen that there is fertile field here for mental and moral improvement. Boxing, wrestling, foot ball, etc., have served a useful purpose by fostering the love for such sports as test heroism, manliness and courage; while many of the feats performed on the gymnasium apparatus call for skill, daring and presence of mind. An arduous feat should act as a spur to a boy of the right spirit; and the voluntary self-discipline of conquering a difficulty through long and persistent efforts, affords a preparation for the struggles of life. Such efforts give all athletic records their true value. The physical education of the last four years of the secondary school course should consist of gymnastic drills, field games, group contests and athletic sports. By the age of 14 or 15 the boy, if properly trained, will have acquired full use of his muscles, taken on some individual accomplishments, and will be prepared to enter athletic contests with some restrictions and modifications. I say advisedly "with some restrictions," for when preparatory school boys enter the field of competitive athletics they incur some physical risks and moral dangers. Practice for exhibitions, contests in gymnastics, or trials for the best all-round performance in several kinds of sports, have within them great possibilities of physical, mental and moral improvement. But a contest that puts a premium on jumping the greatest height, or lifting the heaviest weight, puts a premium on a high degree of specialization and on the acquirement of bodily conditions which are more or less abnormal. Games like base ball, basket ball or foot ball, where players may advance their side by injuring opposing players are not games to be encouraged unless the rules are modified to prevent such foul tactics. For this reason these sports have constantly to be regulated to eliminate the evils that arise and to preserve the good that is in them. The question is all arising among school principals and physical directors as to whether something may not be done so that the weaker portion of the students, as well as the physically strong, may enjoy the benefits of these athletic contests. A method has been worked out, under the name of group contests, which furnishes the best solution yet suggested for the problem. This method consists of dividing the pupils into divisions, clubs, or groups, each of which shall include boys of various athletic ability,—the short and the tall, the strong and the weak, the slow and the alert. Each boy competes in the several events, and whatever he does will be added to the total score of his group. Then if his group wins, he will have contributed something to the victory and will consequently have a right to share in the honor of it. The tendency of this method is to bring about a spirit of mutual helpfulness and joyous co-operation. The advisability of school boys under eighteen engaging in boat races, long runs, tug-of-war contests and violent athletic games should be determined by a physico-medical examinating of each individual, and a full knowledge of the part of the authorities, of the nature and length of the contests under consideration. These prolonged athletic contests bring the respiratory and circulatory organs into great activity and are especially valuable for this reason. But as heart, lungs, brain, stomach, etc., usually do not complete their growth until after the 22nd year it is very important that these organs are not overtaxed in early youth. During these years the good that may be done to a boy is so great, and the injury often so irreparable that it is a matter of anxious solicitude that the best supervision and instruction in physical education be secured for the secondary schools.

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* "Education by Plays and Games." Johnson.
"Games for the Playground, Home, School and Gymnasium." Bancroft.
"Play." Angell.

With such preparation as outlined physical education in colleges would be much simplified. Young men would enter college trained in body as well as mind. They would be familiar with the various individual sports, have learned to play the different athletic games and become conversant with the regulations governing contests. Under these circumstances many of the puzzling questions which now vex the college faculties would not arise. Men would choose their favorite sports as they now do their favorite studies.

The embarassment felt by many college men in taking up a new exercise or playing a new game arises from the fact that they have had no previous training. They have postponed learning new exercises until too late and now find themselves with inadequate muscular control and no staying power. This physical deficiency makes them defer to begin training and many of them never attend the gymnasium or frequent the athletic field.

Although leading educators throughout the land, upheld by the researches of the psycho-physiological laboratories, attest to the unity that exists between the education of the mind and that of the body, it is difficult to realize a practical co-operation between the academic and physical departments in our colleges. If a young man attends a course of lectures on physiology and hygiene, he receives credit for his efforts even if he spends much of his time in pursuits that are injurious to his health. But if he attends to the gymnasium or joins some athletic team, and applies the principles of hygiene, he receives no academic credit. The present need is for some academic method by which health and self control may be measured and given credit in judging the mental efficiency of the college man. The college would render a service by requiring entrance examinations that would determine a boy's potential ability apart from mere book learning. These requirements should consist of examinations to determine general condition of health and muscular control, strength tests and trials of physical efficiency. Such requirements would give new meaning to the physical work in the preparatory schools, putting their curricula in accord with the impulses of the child and combining the constructive forces of brain and body building. Then the work of physical training and development would be largely done in the preparatory schools during the formative period of a boy's life, and when he arrived at college his physical work would be recreative rather than developmental. He would have learned the value of keeping fit for his mental work, and with the vigor and energy that come with prime physical condition he would enter his intellectual pursuits with greater zeal. Simply to advise college men to obey the laws of health, without adjusting the system of credits to recognize such obedience puts a premium on neglecting the advice. Some colleges require those students who compete in athletics to attain a certain grade in their studies; so students who compete for scholarship should attain a certain standard of physical efficiency. An athletic requirement is one of the distinguishing characteristics of the Cecil Rhoades scholarships, and marks the beginning of a movement, which is to bring the college and the world into more sympathetic relationships through the practical efficiency acquired by some physical education.

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WE WOULD LIKE to call particular attention to Mr. Harmon's article on "The Commercial Value of Parks and Playgrounds" reprinted in this issue. With arguments of this character it will be much easier for playground advocates to demand that one-tenth of the total area of a city be taken up by parks and playgrounds. Send marked copies of this issue to all persons whom you wish to interest in your playground plans. The plan as outlined will appeal to every open-minded business man as one that is practical.

YOUTH AND PHYSICAL EDUCATION.

By Carl L. Schrader.

"Youth! We are unconscious of it so long as we possess it. It flows through our blood, shines out of our eyes, resounds in our laughter, manifests itself in our fearless adventures. We are youth itself. Inseparably connected with us we accept it as something self-evident, just as the rays of the sun, the blowing of the wind, or the appearing of the flowers in the spring. To us belongs the world. The thought that somewhere in the future lurks and waits old age is far remote from us. But we live on. Very gradually a certain something steals over us and appears in our make up, causing changes. Our laughter once so spontaneous is less frequent and not as hearty, our joy not so free and contagious. Then comes the day when we suddenly grow conscious of the fact that youth has left us. When did it happen? Can we remember the day?

"Once we are conscious of it we struggle hard to keep hidden from others what we ourselves have known for some time. With perceptible effort we try to be jollier even than the young. A sort of nervous energy radiates from us, which however soon tires us. Finally we overcome this feeling of reluctance and we begin to call ourselves old. First jokingly with a sad smile playing about our face, later with quiet resignation. It it is the iron law of nature to which we must bow."

Thus is the disappearing of youth beautifully pictured in an article from which I have translated these few sentences. It suggests a connection which may be made between this cold fact of vanishing youth and the possibilities which are inherent in our profession, possibilities for delaying this dreaded moment, when we recognize that we are old. I believe it can safely be stated that woman succumbs sooner to old age and offers a more pathetic picture in her effort to hide the fact from others, than does man. The reason for this condition may easily be found in the many conventionalities forced upon woman in her youth, and we find this condition changed in the same degree as we find the conventional barriers disappearing. When we meet mothers to-day who appear to be the sisters of their daughters or sons, we may rest assured that we have before us women who suffered little from conventionality, women who remained young because of a continued interest in youthful pastimes aend pleasures, unhampered in their youthful pursuits of joyful activities. We find a great number of such women to-day, married and unmarried, who have retained their vivacity and an active interest in bodily activity. We also meet great numbers of women who, conscious of the benefits to be derived from such activity and interests, but who, having been deprived of this in their youth for various reasons, arduously apply themselves to make the best of the possibilities which still await them in certain forms of exercises. But there still remains that great mass of women who are old before they really have lived through a reasonable period of youth. The endless number of donts arbitrarily strewn in the path of the young girl are the stones which early complete the boundary wall of youth in the life of the woman. Very early in the girl's life she is told of the impropriety of running, jumping or climbing; if not entirely forbidden, she must at least not run too fast or jump and climb too high.

Why? This the mother cannot answer nor can it be told by those self-enthroned moralists who for want of something better to occupy their minds, set up a standard of propriety entirely arbitrary. Does it ever occur to these well-meaning teachers that they suggest thoughts to these young harmless frolicking girls which accomplish just the reverse from what they really desire to bring about. The question why they must not do these forbidden things brings to the minds of these girls a variety of distorted interpretations. It is in this connection that the woman director of the gymnasium, whether it be grammar or high school, preparatory school or college, Y. W. C. A. or neighborhood center has a mission to perform which is of the greatest significance. She must be the guiding star, she must possess a degree of excellency in her performance which at all time will be an inspiration to those who are under her care, and thus they will learn to see in such performance only the art and not an offense to society. There are of course too many different activities to permit an individual to be expert in all, but to be equipped in many activities and expert in some should be the aim of every instructor. It is important that postural faults are corrected and measurements taken; it is well to impart and insist on knowledge and practice of hygiene; it is well to influence the shaping of character and to teach the many things in manner and bearing which belong to a well-bred woman. If with it all, however, we have failed to create in the individual such enthusiasm and desire which manifests itself in a voluntary pursuit in at least one form of bodily activity, then we have ill succeeded in our calling. The degree of voluntary pursuit of playing games, of skating, swimming, mountain climbing, boating, etc., in after school life is the true criterion of a successful and extensive physical education, during the school and college life. What profits does a physical education net which terminates with graduation and which during its practice has only been a cold performance of a school regulation? Now let us apply this thought of vanishing youth to the instructor of gymnastics herself. Of all teachers she can least afford to acquire the resigned habits of a typical schoolmarm. It is not the color of hair or the calendar age which signals the departure of youth, but rather the cessation of active participation in sport and the attitude which one maintains toward the youthful performances and pranks of the younger. There are many gray-haired instructors of advanced years who because of this retained youth are in closer touch with their pupils than many a young teacher who has grown away from doing things with or for the pupils. Doing things! That is the keynote. As we glance along the line of instructors who have been in the harness but a few years, we find already much too large a body of those who are teaching only from the distance, that is from their office. They do the planning but leave the doing to assistants, in other words, they are beginning to preach things they do not practice, and that is a serious mistake. When the director withdraws from actual doing she loses her grip, no matter how efficient her assistants are. It is true that in a large and well-organized department the planning and administrating does require much time on the part of the director, but in my estimation that director ceases to get the best results out of her department who resigns herself entirely to the passive task of planning and supervising, without remaining in intimate touch with the pupils and who gives them the benefit of his or her personal influence and encouragement. It does not lower the dignity of the director one iota to mix up occassionally and frolic with the students in the gymnasium, pool or on the field; on the contrary, a love and admiration will spring up which will be of a life-long influence to those who are thus being encouraged to play with a youthful spirit of forgetfulness of life's earnest ways. I would much rather be criticised for mingling too freely with students than have the name of rarely getting into my gymnasium clothes.

Doing, then, is the one issue we must consider paramount, and in this doing we must give due consideration to those activities, which lend themselves most convenient for practice in after-school life. The women instructor more than the man must take the initiative in matters of sports, tournaments, tramps, etc., because young girls are less likely to organize for games and sports than boys are. Here is an opportunity to show how, from the dignified pedestal of the teacher, she can dismount and enter into a game of basket ball or tennis, or vault over the horse, climb the rope, dive into the pool, all with an abandon which in time will prove contagious to others, and cause the pupils to follow the example and enter into the performance with enthusiasm. If the heads of schools whose duty it becomes to engage a director for the gymnasium would, in enumerating the desired qualifications, insist more definitely upon the ability to swim, skate, row, play games, dance, etc., instead of calling for qualifications entirely foreign to a department of physical education such as mathematics, languages, elocution, etc., the students of that school would be infinitely more benefited. It is the business of an aspirant for such a position to acquire these above named arts to the point of teaching ability, while the other qualifications should merely have been a part of her general education. Our profession is too broad in itself to even tolerate any division of interests and duties over subjects which lie entirely outside of our field. Where, of course an instructor considers her duties ended when the class instruction is over, then her many idle hours may suggest to the head of the school and justly so, that she has time for additional duties. It is a golden opportunity lost not to get hold of the students after school hours. These opportunities should not only be taken advantage of from a sense of duty but also from the self desire of doing something for the joy of it. In order to enjoy a gymnastic or athletic performance we must do it well and be able to come out a winner some times. It is the fear of being defeated or outdone by a pupil which causes many to avoid showing their hand and with this avoiding our youth disappears and our influence as leader ceases. It is this active participation then which keeps an instructor of physical education in that youthful frame of mind, which keeps her in close contact with her students and which stimulates them to earn such prolonged youth for themselves. With the decreased demand for doing things on the part of the teacher comes the increased danger of a shortened professional life, so that it becomes of vital importance to the teacher to keep up the practical ability and thus retain youth and eligible for a greater number of years.

NEW YORK'S PURE-AIR LAW FOR WORKMEN.

By C. M. RIPLEY, New York.

It costs money to purify anything. Whether it be the Panama Zone that must be made habitable or a political situation which requires a housecleaning—all of these worthy enterprises require considerable expenditure and there will always be found some who protest.

Even our worthy Pure Food law came in for its share of complaint, and now we learn that the New York Labor law, requiring a supply of fresh air for the employees of workshops and factories is being subjected to some criticism.

The law reads as follows:

"The owner, agent or lessee of a factory shall provide in each workroom thereof, proper and sufficient means of ventilation, and shall maintain proper and sufficient ventilation; if excessive heat be created; or, if steam, gases, vapors, dust or other impurities that may be injurious to health be generated in the course of the manufacturing process carried on therein, the rooms must be ventilated in such a manner as to render them harmless, so far as is practicable."

William W. Walling, chief factory inspector for the State of New York, interprets the law as follows:

"As defined by Dr. John S. Billings, perfect ventilation means that any and every person in a room takes into his lungs at each respiration, air of the same composition as that surrounding the building, no part of which has recently been in his own lungs or those of his neighbors, or which consists of the products of combustion generated in the building, while at the same time he feels no currents or drafts of air, and is perfectly comfortable as regards temperature, being neither too hot nor too cold.

"How much air is required to meet these conditions?

"Not less than 2,000 cu. ft. per hour for each person, with the same amount per hour for each cubic foot of gas consumed, whether for light, heat or power."

Some landlords in New York City have put forth the claim that the amount of fresh air specified by the Department of Labor was an "arbitrary quantity." Several authorities on the subject of ventilation who have been consulted in the matter and who are also entirely disinterested—agree that 2,000 cu. ft. per hour per person is common practice and is based upon definite laws or rules which have been followed for many years in the design of ventilating systems.

The Architects and Builders' Pocketbook, written by Frank E. Kidder, C. E., Ph. D., states that 1,800 cu. ft. per hour per child should be the standard for school buildings—this amount being required by law both in Massachusetts and New York. It further states that in buildings more closely packed, and occupied for a longer period, the air supply should be from 2,000 to 2,500 cu. ft. per hour per person. In giving an example of a school room of certain dimensions, he shows that the standard amount of air would result in the air in the room being changed about eight times per hour—which certainly does not appear to be an excessive amount.

Since the above applies only to buildings where people sit quietly, or for buildings where children only congregate—it is difficult to see how the representatives of the New York Department of Labor can justly be accused of an "arbitrary" action in interpreting the meaning of "proper and sufficient" ventilation.

Percival Robert Moses, consulting, heating and ventilating engineer, of New York City, states that he has found the rate of 2,000 cu. ft. per hour per person a satisfactory and conservative working basis. This was used in designing the ventilating equipment of the large department store of B. Altman & Company, the Rikers Island Penitentiary, the Baltimore Stock Exchange, and the new Hearst Building in San Francisco, as well as in others; and he stated that the operating expense for a system laid out on this basis has not been found excessive, and will not be, if due care is taken at the time of installation.

In a loft 25 ft. wide and 100 ft. long, containing 80 workmen, and lighted with electricity, the amount of air required would be 80 times 2,000—160,000 cu. ft. per hour. This amount of air per hour would move at the rate of about 1/8 of a mile per hour—and would be sufficient to change the air in the loft six times per hour, assuming a 10-ft. ceiling. Since the Massachusetts and New York State laws for school rooms require eight changes per hour and since some authorities recommend even 50 per cent in excess of this—it appears that the action of the factory inspector hardly comes within the definition of the word "arbitrary."

Dr. Daniel R. Lucas, of New York City, states that it is a well-known law of hygiene that one gas jet will consume as much oxygen as five persons. Since electric lighting—thanks to the new high efficiency lamps—has been reduced in cost 50 per cent or more, it appears that the easiest way to comply with the labor law regarding ventilation would be to abandon gas lighting. In New York City especially this would seem advisable, as electricity can be bought by meter from the street or from the power plant downstairs.

Since the average gas light is equivalent to five persons, as far as its vitiating effect is concerned, it can be readily seen that the ventilation required will be reduced 5-6 by abandoning gas light, assuming one gas jet to each workman. Or, stating it in another way, the landlord who clings to gas lighting must install ventilating apparatus six times as large as would be necessary if electric light were used. This calculation is also based upon conditions where one gas jet is provided for each workman.

The operating cost for a ventilating system is made up of two items: (1) Power for turning fans; (2)) Additional heat for incoming air. In a loft building where the tenant will pay for the power, the expense will automatically be divided and the landlord will pay for the extra heat required, since heat is included in the rent. It will also be noticed that again the adoption of electric lighting will cut the bills for operating expense to a remarkable degree. This cut in expense will affect the tenant, since a much smaller ventilating motor will be required, and it will also affect the landlord because less air will have to be drawn in and hence the cost for heating would be diminished.

In large systems the services of an expert heating and ventilating engineer would probably prove valuable, and it is possible to so design the equipment that a judicious "recirculation" of the air from halls and basements will effect an economy in the fuel bill. This air is seldom impure and requires much less heat than if cold air were brought in from outside. It is also possible in buildings where high pressure steam is available, or where boilers which have been run at low pressure can be run at a higher pressure, to adopt the following policy:

Provide steam engines to operate the fans and turn the exhaust steam into the heating coils—thus getting a double use out of the steam and cutting down the electric bill. This idea could be carried still further in many instances, and economies could be made (especially in the winter) by abandoning electric pumping—again lowering the electric bill.

This is the stock argument of the advocates of isolated plants, who contend that great economies result in buildings of 1,000,000 cu. ft. or more if engines are installed and electricity is made on the premises. It is a fact that steam at high pressure only contains about 6 per cent more heat than steam at low pressure. Thus the argument that electricity can be made and a building heated with exhaust steam, is advanced. The layman does not appreciate one very peculiar fact about steam—that at 5 lbs. pressure it is only about 6 per cent cheaper to make than at 100 lbs. pressure—showing that the cost does not increase in proportion to the pressure.

In the future it is probable that factories and loft buildings will be equipped with ventilating apparatuus at the outset, with the ducts concealed in the walls and the fans located in the basement. A model building of this character has recently been completed at 37-43 West Twenty-sixth Street, New York, in which the landlord at the time of construction had the ventilating system installed at his expense, after the design of a prominent consulting engineer. Thus the cost of operating a system and the responsibility of maintaining it in good condition does not rest upon the tenant. At the present writing we are informed that the owners of the West Twenty-sixth Street corporation have already rented eight out of twelve floors—a flattering reception and appreciation of the advantages they have to offer.

It is natural during this transitory period and before the betterment of the standard of building construction has become general, that some differences are bound to arise between the Factory Inspection Bureau and the landlords and tenants. It is to be hoped that this condition is but temporary.

In the report of the United States Bureau of Labor at Washington, D. C., it is shown that deaths among factory workers due to consumption, were divided as follows:

Employees exposed to metallic dust	36.9 per cent.
Employees exposed to mineral dust	28.6 per cent.
Employees exposed to vegetable fibre dust	24.8 per cent.
Those exposed to animal and fibre dust	32.1 per cent.

An ingenious conclusion was reached by Mr. Frederick L. Hoffman, of the Prudential Life Insurance Company, based on this report. It is his opinion that by intelligent methods of ventilation and dust removal the consumption death rate among the wage earners would result in an annual saving of 22,238 lives. This would add, quoting the *Engineering News*, 15.4 years of life for every death from consumption avoided by rational conditions of industrial life. Such a gain would represent a total of 342,465 years of additional life time, and by just so much the industrial efficiency of the American nation would be increased. Placing the economic value of a year's life time at only $200, the total average gain to the nation would be $3,080 for every avoidable death of a wage earner from consumption, representing the enormous total of $68,493,000 as the annual financial value clearly within the range of practical attainment. Therefore, nothing within reason should be left undone as a national, state, and individual or social duty to prevent that needless but now enormous loss of human life from consumption due to the unfavorable condition in American industry.

None will deny that the efficiency of workmen varies with their good health and comfort. Slight physical ills are prevented by better surroundings, says William H. Tolman, and the loss to the employer due to absences, brains made stupid by breathing foul air—are immediate losses to the employer through lowered efficiency, and later involve a loss of trained employees and the necessary breaking in of green help.—*Heating and Ventilating Magazine.*

DEEP BREATHING.

By Dr. Daniel F. Comstock of the School of Technology (as reported in an interview in the Boston Herald.)

"My experiments have shown me, that enforced deep breathing over a period of several minutes produces several striking effects on the body, the chief of which are: Material increase in the length of time which the system can do without respiration; effective mental stimulation; material increase in physical endurance for a short time, and a rise in the frequency of the pulse beat.

"Daring rescues from suffocation and drowning are common enough to make the knowledge of this possible threefold endurance without air of no little value; and by proper use of the lungs remaining under water or in dense smoke for a considerable time is possible.

"With myself I have found that four minutes of enforced breathing makes it possible to hold the breath for 3½ minutes, whereas without this preparation 56 seconds was my limit. The time during which it is possible to do without respiration increases, of course, with the length of time during which preparatory breathing is carried on. The increase does not go on indefinitely, but finally reaches a definite limit beyond which further length of time given to preparatory breathing does not increase the time during which the breath may be held. The limit varies with different people. I can hold my breath 3 minutes and 34 seconds by the stop-watch by this method, while one of my friends claims five minutes' holding without discomfort. The change produced in the system is certainly more fundamental than a lung change, and it would appear to indicate a temporary change in the blood constitution. I have seen some very amusing betting on how long it was possible to hold the breath, and I have seen the cocksure better laid low by not knowing this possible resource of his adversary.

"The effect as a mental stimulant is very pronounced. I have noticed in my own case that mental fatigue may be postponed far beyond the usual point by two minutes of rapid deep breathing at half-hour intervals. A feeling of sluggishness or sleepiness from long mental effort may be completely dispelled. I have never noticed any reaction, as in the case of other stimulants, and altogether it seems very satisfactory.

"The effect on muscular fatigue is also striking. A difficult arm exercise with heavy weights, which I could not repeat under ordinary circumstances more than 20 times, I found that after four minutes of preparatory breathing I could do 27 times without especial extra effort, thus gaining about 30 per cent. in power. This increase I found to exist almost constantly in all stages of fatigue."

Dr. Comstock has not carried out experiments as yet on his breathing method in track athletics, but he is of the opinion that if it will not increase the speed materially it will leave the sprinter in a better physical condition at the finish and prevent collapse.

Instead of the latter portion of the time of enforced breathing being difficult and a struggle, as is the last few yards which the runner tears off on his nerve to break the tape in a race, the breathing becomes easier as the lungs get used to it and the last few seconds seem to pass more quickly than the first.

Deep breathing will often cure a headache almost instantly. The pulse beat goes up verv rapidly while the breathing is continued, in an average case from 65 or 70 to 105 or 110. The breather experiences considerable dizziness at the time, which passes off in a few seconds and leaves the head perfectly clear.

By deep breathing the man of sedentary occupation, who has labored all day over book-keeping or writing and finds his head heavy and his figures a blur, may instantly clear himself for action again and sustain his effort for hours, by stopping to breathe before an open window every half-hour. The breath must be taken in deeply, filling the lungs to their utmost capacity, and not held for any length of time, but expelled sharply as from a bellows, another breath being taken instantly, the object being to get as much oxygen into the lungs in as short interval of time as possible.

Vigorous exercise in the open air has long been advocated for warming the body. The teamster who is chilled and beats his body with his arms is a well known example. The same effect that this action produces can be produced by the deep breathing, only the whole body will be warmed to a greater extent, for while the physical action drives the blood made sluggish by the cold through the arteries, the rapid breathing increases its power of warming, much as the draught of whiskey does. A combination of the breathing and action warms the body more effectively than a steam heater.

Oxygen makes up a large percentage of the nourishment of the body. If a man's breath is stopped he dies, and hence if insufficient supply of oxygen is taken into the body an impoverished state ensues much like that of partial starvation from lack of food. The forced breathing makes up for this often insufficient supply of oxygen and adds extra oxygen, the result obtained being much like that of crowding a furnace to obtain more steam pressure by burning oil and turpentine. With plenty of oxygen a thin person puts on flesh and an over-fat body is reduced, the blood carrying out its natural work in the expulsion of the useless matter segregated.

The combustion of oxygen in the tissues gives heat; the more oxygen the greater the combustion and the more heat created. Regular deep breathing at night, if the air of the room be pure, is a more powerful sedative than any drug; long, deep breaths of fresh air taken without quick expulsion bringing sleep to the most troubled mind. Regular deep breathing improves the general health, and lessens suffering from functional disorders.

INDIAN CLUB DRILL.

By Karl F. Ross, M. D., Physical Director Turnverein Germania,
Los Angeles, Cal.

Exhibited at the Bundes Turnfest, held at Cincinnati, Ohio, June 1909.

(Concluded.)

1. Number of participants 16.
2. Music: "Schottische."
3. All Tactical evolutions performed while running.
4. Clubs are carried upon forearms during all running (arms bent at right angles, forearm horizontal, upper arm vertical) unless otherwise commanded during drill.

TACTICS— GROUP C.

Figure 24. All run to flank circle and circle left 1 1-2 times—32 counts.

Figure 25. Members 2 and 4 of each rank 3-4 circle left. Members 1 and 3 of respective rank forming inner circle—8 counts.

Figure 26. With right arms raised obliquely outward and up, and left arms raised obliquely outward and down outer circle 1, 3, 5, etc., run 1-2 circle left, and inner circle 2, 4, 6, etc., run 1-2 circle right, RUN—12 counts.

Figure 27. Alternate or change positions of arms and partners 1 and 2; 3 and 4 cross clubs of inside arms obliquely side upward and 4-4 wheel left around centre of couple as pivot—8 counts.

Figure 28. The inner circle 1-4 circle left forming in rear of 1, 3, etc., of respective ranks—4 counts. Ranks C and D face left about in 4 counts.

Figure 29. Ranks A and B circle left, C and D right, one time—16 counts.

Figure 30. Circles change places by running figure eight; repeat coming back to original positions—32 counts.

Figure 31. Ranks C and D (members 9-16) left about. Rank A leading, all forward and angle march left and around room, RUN—16 counts.

Figure 32. Ranks A, B, C, D, angle march left opening ranks to 4 steps distance, RUN—16 counts. Ranks A and C 3 counts forward, RUN—(2 steps.)

CLUB SWINGING—GROUP C.

Exercise 1.

(a) Ranks A and C with double arm circle left lunge left sideward 1.

Part 1. (b) Close right foot to left with double hand circle left back of shoulders 2.

(c) Repeat (a) 3.

(d) Close right foot to left with clubs tipped on forearms (arms sideward right) 4.

(e) Swing arms down 5.

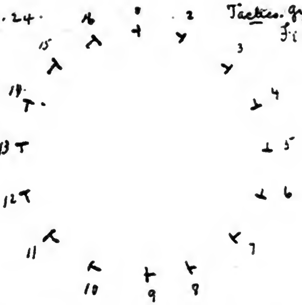
(f) Double hand circle right back of hip 6.

(g) Double hand circle right front of hip 7.

(h) 1-2 double arm circle right and double hand circle right in front of arms (upward) 8.

Part 2. Repeat whole to opposite side 9-16. Repeat parts 1 and 2 —32 counts.

Fig. 24.



Tactics. group C

Fig. 25.

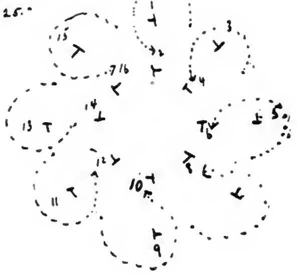


Fig. 26.

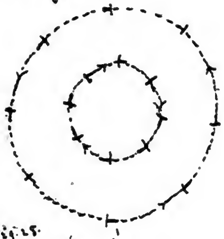


Fig. 27.

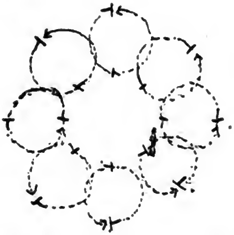


Fig. 28.

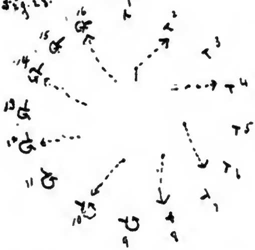


Fig. 29.

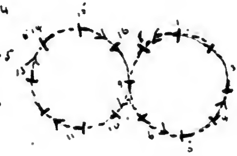


Fig. 30.

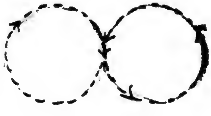


Fig. 31.

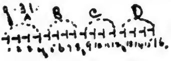


Fig. 32.

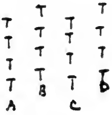


Fig. 33. same as 31.

Note:—Ranks B and D in exercise 1 and 2 of group C work to right as ranks A and C work to left and vice versa.

Exercise 2.

(a) Ranks A and C pirouette left with double arm circles left 1.
(b) Same to the right 2.
(c) Double arm circle left (bring arms sideward right) 3.
(d) Lock step right and double hand circle left (backward) in front of arms (inside of right arm, outside of left) 4.
(e) Double arm circle right 5.
(f) Hand circle left back of left hip while right arm hand circles right back of right shoulder 6.
(g) Double arm circle left 7.
(h) Hand circle left back of left shoulder while right arm hand circles right back of right hip 8.

Repeat a, b, c, d, e, f, g, to other side 9-16. Repeat whole to both sides 17-32.

Exercise 3.

Follow arm circle left 1. Follow hand circle back of shoulder 2. Follow hand circle left (arms upward) in front of arms 3. Follow hand circle left back of shoulders 4. Follow arm circle 3-4 left 5. Follow hand circle left back of right shoulder 6. Follow hand circle left (arms upward) in front of arms 7. Follow hand circle left back of left shoulder 8. Repeat—32 counts.

Exercise 4.

LEFT FACE, follow arm circle forward on left side of body 1. Follow arm circle forward on right side of body 2. Follow arm circle with left on right side and right on left side 3. Follow arm circle forward on left side 4. Follow hand circle forward on right side of arms 5. Follow hand circle forward left on left side of arms and right on left side of arms 6. Follow hand circle forward on left side of arms 7; on right side of arms 8. Repeat all 3 times, 9-32.

Note:—Hands height of head starting position during hand circles.

POSE OF RANKS.

Pose 1. Rank A kneeling right, right arm bent horizontally over head, left arm bent horizontally across front of body and

Rank B lunge left sideward, left arm obliquely outward and up, right arm obliquely outward and down.

Rank C clubs crossed upward above head.

Rank D facing right, right arm bent horizontally above head, left arm obliquely down and backward, right forward lunge. Hold pose for 8 counts.

Pose 2. Rank A straighten left leg sideward, bend trunk right and arms sideward raise.

Rank B with double arm circle inward, lunging and arm positions change.

Rank C with double arm circle inward arms obliquely side upward, stride stand sideward pump.

Rank D kneel left and position of arms change. Hold pose 9-16.

Pose 3. All change to respective positions of pose 1; hold 17-24.
In position STAND, close ranks forward, RUN—8 counts.
The ranks angle march right—4 counts.
The line countermarch left and off, RUN.

FIELD DAY OF THE MILWAUKEE PUBLIC SCHOOLS.

June 4th, 1910.

1. The calisthenic exercises under Part I are designed for the "Drill" of the Field Day Program and are to be taken up by the pupils of the 6th, 7th and 8th grades at once in place of the work prescribed in the "Hand Book." They must be practiced in drill form, that is, the pupils must memorize them and learn to execute them without directions.

The boys and girls should be arranged in two separate divisions in order to enable them to execute the exercises of the divided order type, also to have them become accustomed to this particular form of execution.

The exercises should be practiced with music accompaniment as soon as possible. Sousa's "Stars and Stripes Forever, March" is the piece which will be used on the day of the festival. The introduction of this march has four measures, and this introduction will be played *before Part I begins.* After each part of the drill a pause of eight measures will be made, during which the music will continue. When practicing cause the pupils to count from 1 to 8 for the introduction, and from 1 to 16 for each of the pauses. Since we cannot use the march as it is written, a re-arrangement of the same became necessary, which will be explained to those teachers or principals who will call for the sheet music at the office.

The movements of the exercises must be well marked and the execution must be accurate; the marching-step must be executed lightly and with a marked extension of the leg. Erect carriage of the body must be demanded during the marching and facing.

Classes and individuals must be able to execute the exercises correctly and in drill form (during Mr. Wittich's last visit to the schools before the Field day); *no other will be accepted either in the drill or in the games and athletic events.*

2. The competitive exercises selected for the Field Day are:

FOR THE BOYS OF THE 7TH AND 8TH GRADES:

Broad and high jumps with running start, 100 yard dash, one mile relay race, 20 boys to each team, and Captain Ball, 10 boys to each team.

FOR THE GIRLS OF THE 7TH AND 8TH GRADES:

1300 yard shuttle relay race, 20 girls to each team, Captain Ball, 10 girls to each team.

FOR THE PUPILS OF THE HIGH SCHOOLS:

Boys:—Two mile relay race, 20 boys to each team; Captain Ball, 10 boys to each team.

Girls:—1600 yard shuttle relay race, 20 girls to each team; Captain Ball, 10 girls to each team.

Only pupils *who are well up in their studies,* and *who are also to take part in the Mass Drills, are eligible.*

The boys of the grades will be divided according to size into two classes for the broad jump, the high jump and the dash, in order to give the smaller ones a fair chance. Those who are 60 or more inches tall in their running shoes will form one class and will be called Seniors; those who are less than 60 inches tall will form another class and will be called Juniors.

An exact and careful classification of Juniors and Seniors, under the supervision of a competent person, some time prior to the Field Day will facilitate matters very much and will prevent disputes between judges and contestants.

Principals and teachers are earnestly requested to encourage *all the boys and girls* of the above named grades to prepare for the Field Day. This should be done not merely for the sake of the winning of prizes but for the wholesome exercise which the boys can get out of the preparation. We must make this *our* end in view.

PART I.

Exercise 1—	Two steps sideward left and raise arms forward upward on 1st step and lower them on 2nd step (3rd leg movement)	1— 4
	Left about in 4 steps	5— 8
	Repeat the marching with arm exercise and the facing.	9—16
Exercise 2—	*Boys*:	
	Squatstand and raise arms forward	1— 4
	Toestand and raise arms upward	5— 8
	Squatstand and lower arms forward	9—12
	Fundamental position	13—16
	Girls:	
	Toestand and move arms sideward, upward, sideward and upward	1— 4
	Squatstand and lower arms forward	5— 8
	Repeat the toestand with arm movements	9—12
	Fundamental position	13—16
Exercise 3—	Toestand, lower head backward and raise arms slowly sideupward	1— 8
	Return and place hands on hips on the 16th count	9—16
Exercise 4—	Stride forward left and straighten arms upward	1— 2
	Bend trunk left and lower arms sideward	3— 4
	Return	5— 8
	Same right	9—16
Exercise 5—	Stride sideward left and straighten arms forward	1— 2
	Twist trunk left and move arms left	3— 4
	Return	5— 8
	Same right	9—16
Exercise 6—	Repeat Exercise 4	1—16
Exercise 7—	Repeat Exercise 3	1—16

PART II.

Exercise 1—	Two steps sideward right and move arms forward upward, forward, upward, and forward downward	1— 4
	Right about in 4 steps	5— 8
	Repeat the marching with arm exercise and the facing.	9—16

	Remark:—In this exercise the boys begin with facing and the girls with marching sideward.	
Exercise 2—	Repeat Exercise 2 of Part I	1—16
Exercise 3—	Toestand and raise arms forward	1— 4
	Lower head backward and move arms sideward, palms upward	5— 8
	Return and place hands on hips on the 16th count	9—16
Exercise 4—	Lunge forward left and straighten arms upward	1— 2
	Lower trunk forward and arms sideward	3— 4
	Return	5— 8
	Same with lunge right	9—16
Exercise 5—	Lunge sideward left and straighten arms sideward	1— 2
	Bend trunk backward and raise arms upward	3— 4
	Return	5— 8
	Same right	9—16
Exercise 6—	Repeat Exercise 4	1—16
Exercise 7—	Repeat Exercise 3	1—16

PART III.

Repeat Part I.

PART IV.

Repeat Part II.

Club Drill for the Girls of the Milwaukee High Schools for the Field Day.

PART I.

Exercise 1—	Two steps sideward left and raise arms forward upward on first step and lower them on 2nd step (3rd movement)	1— 4
	Left about in 4 steps	5— 8
	Repeat the marching with arm exercise and the facing.	9—16
	Remark:—One club is held horizontally in both hands, the knob in the left hand, during the first three exercises.	
Exercise 2—	Toestand and raise arms forward upward	1— 4
	Squatstand and lower arms forward	5— 8
	Repeat the toestand with arm exercise	9—12
	Fundamental position	13—16
Exercise 3—	Toestand, lower head backward and raise arms slowly forward upward	1— 8
	Return and raise club to starting position on the 16th count	9—16
Exercise 4—	Arm and hand circle outward left, the latter behind the shoulder, three times. Transfer the club to right hand on the 8th count	1— 8
	Same right. Club horizontally in front of thighs on the 16th count	9—16
Exercise 5—	Stride forward left and raise arms forward upward	1— 2
	Twist trunk left and lower arms forward	3— 4
	Return	5— 8
	Same right. Club in starting in left hand on the 16th count	9—16

Exercise 6	—Repeat Exercise 4. Club in front of thighs on the 16th count	1—16
Exercise 7	—Repeat Exercise 3.	

PART II.

Exercise 1	—Two steps sideward right and move arms foreupward, forward, upward and foredownward	1— 4
	Right about in 4 steps	5— 8
	Repeat the marching with arm exercise and the facing.	9—16
Exercise 2	—Repeat Exercise 2 of Part I	1—16
Exercise 3	—Toestand and raise arms forward upward	1— 4
	Lower head backward and bend arms, club on chest	5— 8
	Return and raise club to starting position with left hand on the 16th count	9—16
Exercise 4	—¾ armcircle inward left with tipping of club (½ handcircle)	1— 8
	Same right	9—16
Exercise 5	—Lunge sideward left and raise arms foreupward	1— 2
	Lower trunk forward	3— 4
	Return	5— 8
	Same right	9—16
Exercise 6	—Repeat Exercise 4	1—16
Exercise 7	—Repeat Exercise 3	1—16

PART III.

Repeat Part I.

PART IV.

Repeat Part II.

Wand Drill for the Boys of the Milwaukee High Schools for the Field Day.

PART I.

Exercise 1	—Two steps sideward left and raise arms foreupward on 1st and lower them on 2d step (3d leg movement)	1— 4
	Left about in 4 steps	5— 8
	Repeat the marching with arm exercises and the facing	9—16
Exercise 2	—Squatstand and raise arms forward	1— 4
	Toestand and raise arms upward	5— 8
	Squatstand and lower arms forward	9—12
	Starting position	13—16
Exercise 3	—Toestand, lower head backward and raise arms slowly foreupward	1— 8
	Return	9—16
Exercise 4	—Stride forward left and raise arms fore-upward	1— 2
	Bend trunk left and place wand behind shoulders	3— 4
	Return	5— 8
	Same right	9—16
Exercise 5	—Stride sideward left and raise arms forward	1— 2
	Twist trunk left and move arms left	3— 4

	Return	5— 8
	Same right	9—16
Exercise 6—	Repeat Exercise 4	1—16
Exercise 7—	Repeat Exercise 3	1—16

PART II.

Exercise 1—	Right about in 4 steps	1— 4
	Two steps sideward right and move arms foreupward, forward, upward and foredownward	5— 8
	Repeat the facing and the marching with arm exercise	9—16
Exercise 2—	Repeat Exercise 2 of Part I	1—16
Exercise 3—	Toestand and raise arms fore-upward	1— 4
	Lower head backward and bend arms, wand on chest	5— 8
	Return	9—16
Exercise 4—	Lunge forward left and raise arms fore-upward	1— 2
	Lower trunk forward and lower arms backward downward	3— 4
	Return	5— 8
	Same right	9—16
Exercise 5—	Lunge sideward left and raise arms fore-upward	1— 2
	Bend trunk backward and bend arms, wand on chest	3— 4
	Return	5— 8
	Same right	9—16
Exercise 6—	Repeat Exercise 4	1—16
Exercise 7—	Repeat Exercise 3	1—16

PART III.

Repeat Part I.

PART IV.

Repeat Part II.

THE HYGIENIC CARE OF THE GYMNASIUM.

By CHARLES J. KURTZ, M. D., Instructor in Anatomy, Physiology and Hygiene in The Institute and Training School.

The hygienic care of the gymnasium can hardly be described in all its details so as to apply to every gymnasium, but mention may be made of some principles of hygiene that should be followed in all of them.

The *ventilation* of the gymnasium should be excellent. The quiet man uses 3,000 cubic feet of air per hour, but as this may be changed about three times per hour without draft, he needs only 1,000 cubic feet of space. The exercising man, however, needs four to six times this amount of air and space. The air may be changed oftener than three times per hour while the men are exercising, say about six to eight times per hour, so that 2,000 cubic feet of space per man is sufficient.

Artificial heating and lighting are usually less apt to be injurious than other factors, and have less influence. *Sunlight,* the importance of which every one recognizes from a hygienic standpoint, should reach the gymnasium, and especially the locker room, as much as possible.

There should be a good supply of cuspidors, well located. The dental or running water cuspidor is excellent and hygienic, but not always practical. A plan that all can follow, however, is to have a box two feet square and three inches deep, almost filled with sawdust, with an ordinary cuspidor placed in the center, or a smaller pasteboard box of sawdust in place of the cuspidor. The sawdust should always be kept moist with a one per cent. solution of carbolic acid. The sawdust boxes are either burned or emptied into the furnace, thus avoiding the necessity of washing cuspidors. It is quite as essential that the use of these cuspidors should be strictly enforced as to have them.

Drinking water should be supplied in the gymnasium. The objections to the common drinking cups are well known. The running over-flow or bubbling cup should be used and, if not allowed to run constantly, a valve may be arranged so that it can run while used, thus decreasing the expense.

It seems old and unnecessary to say that a gymnasium should never be swept and dusted as we ordinarily think of the terms. The floors should be well sprinkled with sawdust, torn papers, or similar material wet with a one per cent. solution of carbolic acid, and then a brush broom should be used and not the ordinary broom. *All* dusting should be done with cloths wet with one per cent. solution of carbolic acid.

Dirty and dusty mats have always been a hard proposition to handle. An ideal method could easily be outlined, but any method must be practical as well. One that can be followed out and used easily is to treat them the same as the floors. However, the mats need occasionally a more thorough cleaning than this. A practical way would be to place the mats in a small room and disinfect with formaldehyde. An additional method of caring for the mats is to have covers that lace at the sides made for them, or a cover may be tucked underneath the edges of the large mats. These covers may be washed and kept clean and thus lessen the frequency of the other methods being used.

I have mentioned carbolic acid a number of times. It is a poison, and also it is rather hard to handle I know, but it is the least expensive and most efficacious of the various antiseptics which are on the market. Crude carbolic acid, which is 30 per cent. strength, should cost about 15 cents a quart, so that the use of it is not an expensive proposition.

Lockers and locker rooms are and always will be a source of annoyance, as men will place unclean clothes in them. Suggestions and rules of suitable means should be brought to the attention of members and enforced with courteous firmness. Some advocate going through the lockers periodically and having soiled clothing laundered and charge the expense to the member. The unclean aspect can be largely overcome, however, in spite of the careless members by disinfecting the entire room with formaldehyde periodically, according to use. The locker room should be so placed that it is properly ventilated and lighted, and should also be arranged so that it can be easily hermetically sealed and disinfected. This can be done on a Saturday evening, opened on Sunday morning and by Monday the lockers will be ready for use. The cost of disinfection should be less than 40 cents per 1,000 cubic feet of space. The mats and similar apparatus can be placed in the locker room and disinfected at the same time without additional expense.

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NOTES AND COMMENTS.

—THE FOLLOWING EDITORIAL in the Philadelphia Ledger is of such general interest to parents and teachers that we reprint it.

A couple of English experimenters, under the auspices of the Francis Galton Laboratory for National Eugenics, have just published the results of a series of inquiries to determine whether the children of parents addicted to habitual alcoholic indulgence are inferior in physical development or intellectual activity. The results are bound to provoke bitter controversy, for the reason that their findings traverse the doctrine, universally accepted among the advocates of total abstinence, that many diseased organisms are transmitted from the drunkard. Miss Elderton and Professor Pearson, who conducted the inquiry, seem to have been greatly surprised by their own findings, for in their report, as it has been summarized in the English newspapers, they appear to apologize for their discoveries.

They say, wisely, that "no greater evil can be done to a good cause than by obtaining, through emotional appeals, general credence for statements which wider experience shows to be inexact"; but they add that "the desire to know before acting, and the mind which refuses to express an opinion before knowledge, are so unfamiliar to many workers in the field of social reform that the possibility of starting an inquiry without any bias as to its result seems to them almost an iniquity, the mark of an abnormal temperament."

Having thus anticipated the criticism they are likely to encounter, these students give the results of their investigation in the cases of upward of 3600 school children in Manchester and Edinburgh, concerning whom the social and family statistics were unusually complete. From this study they conclude that, while the death rate among the children of alcoholic parents is higher than among the offspring of sober parents, the former were slightly heavier and taller, their general health was slightly better, and they found no connection whatever between parental alcoholism and filial intelligence.

It is quite reasonable to suggest that a more prolonged study. with a greater number of subjects, might modify these conclusions, but until they have been set aside by research more profound they will be quoted in opposition to the view commonly held concerning the visitation of the sins of the drunkard upon his children and his children's children. The findings of the Galton Laboratory experts will have many supporters among those familiar with the inmates of children's homes and asylums. But that they will create "consternation" among many enthusiastic advocates of "temperance," as has been suggested by one of the British commentators, is as certain as that the sun will rise tomorrow. For the subject is one about which some people cannot argue, and which is in their minds far removed from the domains of philosophy and logic.

—IN HIS ANNUAL REPORT for 1908 the chief medical officer of the Board of Education of England urged that the teaching and practice of physical exercises should be organized and co-ordinated upon a national basis, and applied and directed specifically to the education of the child. "For many of the frail, stunted and ill-developed children in public elementary schools suitable and appropriate physical training, if coupled with sufficient nourishment, is the best of all medical treatment." To give legislative effect to this suggestion a bill has been introduced in the House of Commons by Mr. Whyte. Its object is to secure universal and continuous training for the youth of both sexes up to the age of 16 years, in order to avert, as far as is possible by such means, the danger of physical degeneration disclosed by the report of the Inter-Departmental Committee on Physical Deterioration.

It is provided that local education authorities shall provide in all elementary, secondary, intermediate, or other schools within their areas physical training for all pupils during a certain period daily, the time so occupied to be not less than two hours per week. Every local authority must appoint a committee to supervise the work, the cost of which is to be defrayed out of a special Parlimentary grant. Children leaving school before they are 16 will be required, under a penalty, to attend continuation classes on at least two evenings a week until they attain that age.

—THE CHICAGO TRIBUNE publishes another set of "Healthgrams" which, we suspect, are close kin to a previous installment in these columns from the Bulletin of the Chicago Department of Health:

"Taking in fresh air is healthier than putting on fresh airs."

"Don't permit your palate to get your stomach into trouble."

"Children in factories mean a crippled citizenship."

"Make your neighbors' front yard jealous of your back yard."

"The trees and the grass are making life-giving air for you. Go get it."

"There's some consolation in the thought that it's healthier to walk than to ride in automobiles."

"Have thought for the capacity of the baby's stomach; it is not built or operated to suit the mistaken notions of fond but ignorant mothers."

"The Civil War killed 205,070 Americans in four years; consumption kills 800,000 in the same length of time. If 'war is hell' what is consumption?"

PLAY AND PLAYGROUNDS.

SOME SHADOWS OF OUR PUBLIC PLAYGROUNDS.

By JOS. CERMAK, Instructor at Medill High School, Chicago, Ill.

It is a well established fact, that our public playgrounds are an important factor in the education of the coming generation in large cities. It has been proven by statistics, that an increase of the number of playgrounds means a decrease of petty crimes among those unfortunate children, who are left to themselves, without the guidance of an intelligent father or a loving mother, and that the more our municipalities or states spend on playgrounds the less they will have to spend on court rooms, reformatories and jails. A boy may not be bad, but if his natural instinct for play or any other healthy physical activity is not satisfied, he easily becomes a victim of the numberless temptations, which are offered to neglected and inexperienced boys and girls in every large city.

But, like everything else, even these great institutions, the playgrounds, are not without faults, without some shadows. I am writing of experiences which I have had with some of the "playground boys and girls" as a High school instructor, and I wish to state, that in pointing out some of the faults of the playgrounds, I do not intend to criticise the instructors, but the conditions under which they are obliged to work.

"What do I wish to accomplish?" This question is the best guide to every gymnastic instructor. His own answer to this question will show him the way to reach his goal, his aim, his ideal. We must have our aim before our eyes all the time, for it is the light-house which shows the way even to those who are groping in the darkness of ignorance, or are still tossed helplessly on the seas of doubts. If I know the aim, if I have the goal before my eyes, I shall easily find the way.

Is competition among the teams of different playgrounds conducive to fair play? Does it cultivate the spirit of honesty? Does it build characters? I doubt it very much. We can not answer these questions satisfactorily even in our high schools, where, as I presume, the players participating in league games are under stricter supervision than are the playground teams. So long as the chief aim of the players is "to win"—so long as the players are playing for a reward, whether in the shape of a piece of gold or silk—they will try "to win honestly if they can, and if not they will try to win anyhow." So long as the public, and oftentimes even the press, judge the ability of a gymnastic instructor by his "winning teams," one need not wonder that "victory" is the instructor's only aim—"victory at any price, his goal"—and this wrong goal naturally must show him the wrong way. I frankly admit, that conditions in most public schools are not much better in this respect; that even school boys are not taught to play for the love of the game, but for some material gain—medals, banners—or, perhaps, notoriety. When the instructors showed a reluctance to devoting their spare time to "coaching teams only," and said that the school gymnasiums were not built only for the benefit of five, nine or eleven able-bodied boys, because they wanted to devote their time to those pupils who needed play most, they were made targets of "witty" remarks about "not being able to catch a ball" and even their efficiency as instructors was questioned. This last information may seem out of place in this article, but it is my intention to throw a little light on the conditions under which we are obliged to work, in case somebody would criticise us for tolerating things which we condemn.

Now, let us pay a little attention to the physical training of the children, which is the main object of this article. What would we say if a growing boy would be left to himself in his mental development—if he would be allowed to follow his own inclinations—if his mental and moral training would be left to his own judgment? But this is what is being done in his physical training, and this, in my opinion, is one of the faults, one of the shadows, of our playgrounds as conducted at present.

We see that both sections—boys and girls—are provided with all kinds of apparatus for heavy gymnastics, and that children of all ages and physical condition have free access to those apparatus. What is the result? Small, delicate, and poorly nourished children try to imitate larger and stronger boys in their efforts to perform "tricks." In their eagerness to excel they must expend too much of their vitality, which they need so much for their growth. We know that girls never know the limits of beneficial exercises, and that they exercise on the "giant-stride," rings and ladders to exhaustion. The composition of blood compels us to be careful in arranging gymnastic exercises for girls, for they have not such a percentage of necessary "oxygen-carriers." If there is a lack of quality, nature, in its effort to even things up, tries to make it up in quantity and the result is, that the heart is strained to a point where gymnastic exercises cease to be beneficial. Aenemic girls, who should be in the care of a doctor, come to playgrounds on the advice of well-meaning but ignorant friends, or of parents, and by exercising on heavy apparatus, or by running or jumping, do themselves more harm than good. Strong and healthy girls, left to themselves, like to do things in the "easiest way." I have seen girls who could do all kinds of "stunts," but on the flying rings they were able to turn one way only (usually to the left.) On the "giant-stride" they like to do all the exercise in one direction only. This shows that girls left to themselves take only one-sided exercise, which naturally must have a decidedly bad effect on their growth and their development.

How can this be overcome? It is impossible for a playground instructor to remedy this when there are hundreds and hundreds of children on the playground. He can not watch the little boys to see whether they are not trying exercise beyond their strength; he can not watch the girls, whether they are not exercising "one-sidedly" from morning until night; he can not watch every girl so as to decide which one of them should be rather in the care of a doctor than exercising on apparatus. These are the conditions on most playgrounds, and the best instructors will be helpless unless these conditions are changed.

Is there a way to rid our popular playgrounds of these shadows? I see only one way:

(a) Remove all the apparatus from that part of the playground which is open to all children, and leave only apparatus for games, and swings; in short, leave only such apparatus which they can use without any detriment to their health and where all danger of strain or injury would be eliminated.

(b) Have all the gymnastic apparatus in an inclosed place and devote afternoons, or at least a few hours a day, to systematic instruction on this apparatus.

(c) Only those children would be admitted to this inclosed place who would be willing to work in classes and follow the directions of a teacher.

Children then could be classified according to their age, strength, general physical condition; in short, instructions would be governed by the known laws of gymnastic hygiene.

And I am convinced that our playground instructors, who are all able men and women and conscientious workers, would draw hundreds and hundreds of children and growing boys and girls to their classes; and exercises thus conducted would be a blessing to the children, whereas, under the existing conditions, where children are left to themselves, the benefit derived from such exercises is rather problematical to a great number.

REPORT OF THE MORTON PLAYGROUND.*

(Opened this year.)

By G. B. SHIPMAN, Principal.

The Morton Playground has enrolled a total of 1356 children. The average daily attendance for July was 146, and for August 168.

I regard this attendance as very good indeed, when we consider the surroundings:—

(1) Within three squares there is a public bath-house to which most of the boys went at least once each day on boys' days, and on two days per week the girls went there.

(2) Within three squares there are three baseball fields. On each of these games were played nearly every day. On Saturdays these were especially resorted to on account of the larger games.

(3) Only a few squares away were two lakes where the boys went to fish and swim quite frequently.

(4) Each child has a back yard and a front porch as a place to play. Many of them have sand in the back yard. This made our sand bin less popular than in the congested parts of the city.

(5) Two churches, some distance away, conducted Art, Industrial and Bible classes for a part of each morning. This may account for the fact that we had our best attendance in the afternoons.

Songs:—The singing work was especially hard at first. The children scarcely knew any songs. They seem to sing very little in school. It being a new yard they knew none of the playground songs. Notwithstanding this fact the children have learned a number of songs, and some have become popular. Some are the following:—Patriotic Medley, Uncle Sam, Betsy Ross, America, the A. B. C. Song, Good Morning Merry Sunshine, The Golden Rule, Guard the Flag, Hurrah for the Flag, Marching Song, Oh bring the Fife, The Merry Farmer Boy, Baby's Boat, Morning Hymn Father we thank thee, Pitter patter come the feet, Sweet and Low.

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* Playgrounds of the Board of Education, Philadelphia.

Requests frequently come to us for copies of reports made by teachers at the end of the playground season. We print two typical reports on this years work in this issue, and will print a third in the November issue.—Ed.

Games:—The games were especially difficult at first because they were all new to the children. The games played with the basket ball were most popular for boys. Among these Bound Ball and Dodge Ball were most popular. It has often been difficult to get the girls to play singing games, but when once started they seemed to enjoy them. At times we were obliged to resort to the necessity of closing off apparatus during the game period. It was encouraging to note that when children learned a game they played it in preference to street games, and the same may be said of the songs.

The game activity was the most difficult one to handle in our yard. I suppose that this was largely due to the fact that the playground games were all new and had to be taught. When once learned they seemed to be enjoyed. When a game was taught during the day the children often played it in the evening after the yard closed, and told us about playing it when they returned to the yard the next day.

Stories:—A story or nature tale was told at each opening exercise, both A. M. and P. M. These have been popular. Some children come for these alone. They would often come to us to ask the name of the story after it had been told. This may account for the fact that we had from 30 to 80 children at the morning opening exercise and 60 to 120 at the afternoon opening exercise. These figures represent the usual number, while at times there were even larger numbers.

The story of Cornelia's jewels interested a boy so much that he told his mother of the two kinds of jewels, and that he was one kind.

Occupation Work:—This has been most decidedly the most popular activity in our yard. During this period we had more children than at any other period.

Basketry:—We made Reed Baskets, Reed and Raffia Baskets, Split Reed Baskets, Splint Baskets, Raffia Coil Baskets. Of these the Split Reed and Splint Baskets have been very popular.

Hammocks:—These have been popular. Four large ones were made for our own yard. Ten others were made by children who purchased their own material and made them in the yard (seven large ones by boys, three small ones by girls.) It is interesting to note that some of this interest was aroused by the fact that a barber who lives across the street became so much interested that he bought material for one of the boys so that he could make a hammock for him. After this the boys were anxious to make them for themselves.

Card Board Sloyd and Paper Folding:—This has been made very interesting. Reed and Raffia and Splint work was also much enjoyed.

Chair Caneing:—Four chairs were caned. One piece of brass work has been done. This was an experiment and was a success. Another season I shall be pleased to do more. I think it is an interesting field.

Knife Work:—This has been very much enjoyed by the boys. Many were eager to do the work. We have made a marker, a pencil sharpener, a shield and a bed. Many boys have each cut out the four pieces. These were all made from cigar boxes. People in the neighborhood showed their interest by sending me empty cigar boxes. At no time did we want for material.

Our procedure was as follows:—

(1) We made the Marker. It is a simple piece such as the florist uses to put the name of a plant on and stick in the pot by the plant. In this all edges are straight. Each boy must make it before he can make any other piece.

(2) We made a Pencil Pointer. This contains both straight edges and curved edges, and must be made before the boys could take up the next.

(3) We made a Shield. Hooks may be placed on this, and used for a key-board. In this all edges are curved. Another season I want to use this form for mounting brass work.

(4) We made a small Bench. This besides straight lines contains the angle. This piece was much enjoyed, and is as far as some boys got.

(5) We made a small Bed. This involved the steps learned in the previous four pieces and made glueing necessary.

I should like to have followed with several other pieces, but time did not permit.

I am pleased to note the fact that the loss of material by theft at the Morton has been exceedingly small. To my knowledge there is but one checker board and one pair of scissors missing. We have tried to instill into the children the habit of keeping the material in the playground so that all might enjoy it.

The attitude of parents and business firms toward the playground has been good. They have given cigar boxes, card board boxes and ribbon for our use. They have purchased material for their children so that they might make mats and hammocks.

Through the efforts of one of our teachers the lumber for our sliding board was presented by a lumber company. Two of our janitor's friends made and presented the iron work for our slide. Our janitor gave valuable assistance getting material and assisting in building the same. Our janitor is always ready to get material and make repairs. He helped build the slide, made the "Nigger Babies," and the board for pitching rings.

All parents who came to the yard expressed their appreciation of what we are doing for the children. At first they were afraid of measles and whooping cough, and did not allow their children to come, but when they found the caution exercised they readily sent them. On the last day many were surprised at the work we did, and said another year they would send chairs to cane and have hammocks made.

We have had no occasion for asking the assistance of the Department of Public Safety.

Suggestions for next year: (1) I suggest that an arrangement be made with the school doctor by which we may refer cases to him. I do not think it would be necessary to have him visit the ground, but an arrangement by which we may send cases to him at stated office hours.

(2) I suggest a frame for hanging hammocks over which a shelter tent be placed for the Morton yard. There is no shade in the yard.

REPORT OF THE LEIDY PLAYGROUND.

By L. ELINORE STEPHENS, Teacher.

I herewith submit the following report of work performed at the Leidy playground.

With regard to morning exercise, including rhymes, riddles, songs, stories, the exercises were attended mainly by children from ten to fourteen years of age, with boys in the majority. A close observation of these children showed a marked preference for Nature Songs such as are found in Gaynor Book 2. To illustrate; "Poppies," "Sweet Pea Ladies," "Water Lillies," "Buttercups," "The Cow," Etc.; over the finger plays—"All For Baby," "The Little Plant" and "Thumbkins" were favorites of the latter class.

The riddles were next in favor, several of the boys bringing books of them to read in the circle. The rhymes were not as popular, due no doubt to the child's dislike of reciting before the others.

Of all stories the fairy tales took preference, and were received with careful attention and great seeming enjoyment.

Next in order the "free play" period may be mentioned. At this time of course the swings were in great demand, as indeed the same may be stated of the entire session. Giant strides, ladders, slides, see-saws were patronized less in comparison. The sand pile may be included here as continually pleasing to the little ones, many bringing buckets and shovels from home in order to participate.

At free play too, the checker boards were much enjoyed by the small as well as large children. Board games such as "Parchesie" and "Fishpond" would be extremely popular in this playground, as the children prefer quiet to noisy games.

When the time for the singing games approached it was found difficult to interest the children in the games, most of them declaring a liking for such games as "Cat and Mouse" and Bean Bag Relay. The favorite singing games were "Here comes One Soldier Marching" and "Farmer in the Dell." In games of higher organization the most popular games were "Dodge Ball" and "Promotion Ball."

The boys and girls, both large and small, enjoyed heartily the occupation period. All worked diligently at this time, seeming anxious to accomplish as much as possible. Among the older children the Raffia work, such as Indian Basketry, was in great demand. The younger ones liked to make picture frames. The hammock making too received its fair share of attention, the boys working well on those destined for the Race Street Pier.

The older boys made many book racks decorated with beaten brass, and smaller articles of wood, as pencil sharpeners, etc.

The looms, used principally by the boys, displayed some nice work in mats. Card board sloyd went well, especially when decorated with wall paper designs, the last seeming to be a pleasing novelty to the children.

In general, the attitude of parents, business firms, etc., in the neighborhood toward the playground seemed favorable. A number of parents visited our yard to view the work done. At the car barn across the street from the school great interest was manifested, especially during the Morning Circle, the motormen and conductors often pausing at the gate while we sang.

In conclusion it may be stated that the playground though composed of two distinct classes of children, the prosperous and the very poor, was enjoyed equally by both.

THE COMMERCIAL VALUE OF PARKS AND PLAYGROUNDS.

By William E. Harmon, New York.

The article on The Commercial Value of Parks and Playgrounds which was read at the annual convention of the American Civic Association in Cincinnati, and published in The Survey of December 11. has called forth a number of requests for fuller information on the subject, and especially for the data upon which my theory was predicated.

My contention was that small public parks, if intelligently planned, may be taken from almost any residential land area at the beginning of the period of active development, without loss to the owner or developer, or expense to the municipality in which they are situated. Obviously, if this contention can be established it opens up the door to an almost unlimited extension of a certain type of public park.

In order to bring the facts out clearly, it will be necessary to go somewhat into the inner workings of the suburban real estate business. I will take up first the relative cost of acres and lots—land values at wholesale and at retail. A successful real estate developer must follow fairly closely the following figures:

Cost of land and physical improvements thereon, forty to forty-five per cent of total selling price.

Cost of selling and collection, twenty-five per cent of total selling price.

Cost of maintenance, carrying charges and profit, twenty-five to thirty per cent of total selling price.

These figures are given only to show approximately the average successful developement; there are variations in very high priced and very low priced real estate, but these figures will answer our purpose.

Upon the foregoing basis, the actual cost of a lot of land with the physical improvements completed, represents say forty-two and a half per cent of the total selling price, and to sustain our theory we must secure this amount from the increased value of the lots adjacent to the land segregated for park purposes.

The first requisite to success is intelligent planning. Small parks must be distributed so as to give the greatest value to surrounding land, and must be laid out of such size and comformation as to distribute their burden of cost over as wide a district as possible. These park areas should not have a greater width than the depth of two lots; in other words, the width of a city block. In New York that will mean 200 feet; in Chicago, 265 feet. In both places the principle would operate equally well, as it is the number of lots and not their size which measures the burden. The length of such a park, properly planned, would be from 400 to 500 feet, though this may be extended somewhat without a serious effect, at least, until the length reaches 700 feet.

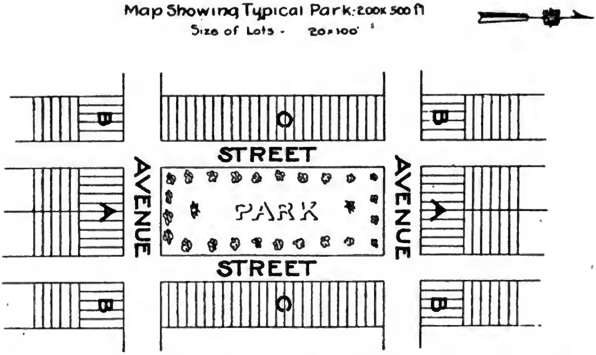
Having our typical park thus in mind— 200 to 300 feet in width (two lots) and 400 to 500 feet in length—let us proceed to the distribution of its cost on the adjoining land.

While I have repeatedly demonstrated to my own satisfaction that these small parks give to the surrounding land an increased value sufficient to offset their cost. I realize that my own conviction may not be shared by others, and as it is difficult to get satisfactory data on the park already in existence, for reasons hereafter stated, I concluded to submit a typical park plan to a number of the most competent real estate developers, with a hypothetical question as to the influence that such a park would exert on the surrounding land if incorporated in a development of their own. As these men set the price at which the public purchases their real estate, and do so through an expert knowledge of conditions, and as they are subject to loss if their opinions as to the value are in error, it would seem that such a consensus of opinion would approximate the truth.

In the accompaying diagram I have shown the typical plan, the hypothetical question, and the valuations given by six of the most prominent real estate men accessible to me at this time. It would seem that this testimony of independent operators would demonstrate my proposition beyond dispute, but if further evidence is desired, it will only be necessary to examine any number of parks, from the center to the circumference, in any number of cities, keeping always in mind that an increase of value of twenty to twenty-five per cent. in the land immediately about the park (as distinguished from land and buildings) will wipe out the land cost of my park in a new district. The difficult of getting data of any value from existing parks in built-up sections comes from the fact that they are almost invariably of the wrong shape to support my proposition, and further, that the land values are retail values, as distinguished from wholesale values.

Map Showing Typical Park: 200x500 ft

Size of Lots - 20x100'



Hypothetical question submitted to six leading real estate operators and developers:

Assuming you were about to develop a tract of suburban property for residential purposes; that said tract contained from thirty to forty acres; that in the center of said tract the city had laid out a small park of four or five acres; that said park fitted perfectly into your street plan as shown in the above diagram. Assuming that if the park were not there the average retail value of the lots over the whole parcel to be $1,000 each:—

What effect would the park have upon the land in 'A', 'B' and 'C' represented n percentage of increase or decrease of the average inside lot value of $1,000?

ANSWERS.

B. H. KNOWLES, Operator in suburban real estate for past twenty years.	"50 per cent increase in value of lots marked 'A', 'B' and 'C'."
EDWARD BOUTON, President of Roland Park Company, Baltimore, Md., and vice-president of Russel Sage Foundation Homes Company.	"At least 25 per cent."
JOHN W. PARIS, Paris and MacDougall Company, large New York developers of suburban property.	"30 to 35 per cent."
WILLIAM H. MILNOR, General manager for Wood, Harmon and Company.	"'A' would be advanced 50 per cent, 'B' 30 per cent, and 'C' 40 per cent.
JOSEPH P. DAY, Real estate—New York City.	"Lots fronting on park advanced 40 per cent."

ERNESTUS GULICK, Ernestus Gulick Company.	"Under proper conditions increase would be 25 per cent."
WILLIAM E. HARMON,	"Lots in 'A', 'B' and 'C' would be increased in value at least 25 per cent.

In addition to the estimates of increase shown in the lots immediately fronting the park, a second question was asked as to the effect of such a park over the whole tract. The opinions ranged from "definite sentimental value" to "fifteen per cent." In the writer's opinion the effect on land not directly contiguous would be measured not by increased selling value as much as by the increase in attractiveness of the whole proposition, therefore, no consideration is given to it.

Let us confine ourselves to the increased value given to the land fronting on the park and see how far this increase offsets the cost of the land embodied in the park and the improvement of the streets surrounding same.

Assume cost of land and improvements to be forty-five per cent of the selling price—($1,000 per lot). Taking typical park shown on diagram:

50 lots taken up by park at cost of $450. each		$22,500
50 lots in 'C' increased $250. each (minimum percentage of increase shown in estimates)	$12,500	
40 lots (20 in 'A' and 20 in 'B') increased $250 each (minimum percentage of increase shown in estimates)	10,000	
Total increase in value of surrounding land	$22,500	

It should be noted that I am using only the minimum figures furnished by my appraisers; the average would be considerably in excess of these estimates. Furthermore, I am not taking the benefit of the increased valuation of corners, which would be somewhat in excess of inside lots; nor any increases in the main body of the land, which might either be measured by an increase in price or a decrease in selling expense.

Variations in the length of the park would, of course, affect the result, but not appreciably till 700 feet is reached, which should be the maximum length for a park of this kind.

If you will, however, accept my type of park, my statement of relative wholesale and retail values, and the testimony of disinterested practical experts upon the effect of parks on adjacent values, you cannot escape my conclusions. This typical park has a number of advantages; it is small, easily policed, does not lend itself to football, baseball, and other rough games which would convert it into an athletic field and deprive small children from using it, and it can be duplicated up to, at least, ten per cent of the total land area without adversely affecting the value of the surrounding land.

Another direction in which intelligence must be used is in the natural evolution from the use of the word "park" to the use of the word "playground"— this should be contemporaneous with the natural evolution of the use of the land for park purposes and for playground purposes. Obviously, if an operator in Flatbush should contemplate the invasion of a thousand kids from the East Side tenements on his newly embellished park, he would recognize its injurious effect upon his remaining property.

As I conceive it, these small parks are for the use of the people in the immediate neighborhood. During the first ten to twenty years of a development there will be no need whatever for them as playgrounds, for vacant lots suitable for all kinds of games are convenient and more attractive, and entirely meet the requirements of the scattered settlement. During this period, these parks should be treated as parks, pure and simple, and embellished with planting. The evolution into a playground as we know it on the East Side, would be so remote that its effect would be offset by changes in the character of the neighborhood. That is to say, the use of these parks by large numbers of children implies a congestion which changes the advantage of the park from the point of view of beauty to an advantage which comes solely from the point of view of light and air

It is a big subject. It would be hard to estimate the economic value of my theory in avoiding the wasteful expenditure of public moneys in the purchase of grounds for park purposes. If its correctness be admitted, it will strengthen the work of those engaged in playground propaganda, and it should solve the problem of certain kinds of open spaces in the cities of the future.

There are two directions in which the data shown in this report can be made available. One is in their appeal to the business intelligence of those engaged in the work of suburban real estate development, who are naturally anxious to get the beneficial co-operation of municipal authorities in the communities in which they are operating. I know of no public act which would create a deeper sense of appreciation, or stronger disposition for co-operation, than the voluntary gift of lands to cities. The second direction is in the use of these facts, supplemented by further investigations, in encouraging legislative action in various states. This action could take the form of permitting cities to segregate lands for park purposes in connection with future city planning, the cost being placed on the abutting properties. If as I stated before, parks are intelligently planned, from five to ten per cent of the total area of unplotted ground within the borders of our cities could be segregated without any burden whatever upon the land owner.

"The Survey."

SOME ENGLISH OPINIONS.

Dr. Tyrrell Brooks of Oxford University has made an inquiry among the principals of the large public schools in England as to the effect of athletics on the pupils. In the last twenty years only five deaths from athletics are on record. One was from asphyxiation, the youth being smothered by food that came up in his throat when he practised on a horizontal bar just after a meal. The other deaths were from surgical operations. In the university in the last twenty years, there have been but two deaths from athletics, one of them valvular disease of the heart.

In the same period there were four sudden deaths among students taking no part in athletics. The heart is most likely to be damaged by excessive indulgence in violent exercise. Vascular damage due to exertion, is rare. Excessive smoking, drinking or gluttony harm the heart the same way; also the toxins of fevers. The only practical danger is in taking exercise after a heavy meal.

Dr. John Morgan's study of the history of men who have taken part in university boat races shows that their longevity and physical activity are above the average. Long school runs should be forbidden to asthmatics. There should be no active exercise until an hour after eating.

Sir Clifford Allbut has had an elaborate series of blood pressure observations made among the student athletes at the University of Cambridge. The only serious results, it was shown, were in those who had had bad colds or other infectious ailments. Sir Lauder Brunton (one ot the greatest English authorities) says that the ideal training for youths is a combination of physical exercise methods and games. Every school, he says, should have a game master

Dr. Anthony Traill, provost of Trinity College, Dublin, says a majority of those taking fellowships there are athletes. In the alementary schools, he said, there should be no general system of exercises unless the pupils are properly fed. He indicated the danger of public school athletics in large cities like New York or London, where there is no standard of feeding among the pupils, and where many pupils come from homes where there is not money enough for feeding on an athletic basis.

The more hazardous the game, says Sir James Barr, the better it is for the development of the character of the individual taking part.

A PLEA FOR CONSERVATISM IN ATHLETICS.

By JOSEPH I. SMITH, M. D., First Turnwart of the Philadelphia Turngemeinde.

In spite of the many broken bones and disfigured faces, to say nothing of the many fatal accidents that have attended the game of foot-ball in recent years, the popularity of athletic contests seems steadily on the increase. There is a great difference between the simple and healthy competition as encouraged by the North American Gymnastic Union (which has ever in mind the harmonious development of the human body), also between the old-time class-rivalry in our colleges, and the spirit of competition as found in the different athletic clubs, the inter-collegiate and international games, in which the champions of the respective clubs and colleges meet to contend with all the tremendous energy and fury of mortal combat. The spirit that was manifested at the last Olympic Games, held in England two years ago, could never appear in any of the National or International games of the Turners. In Germany 1908 in "Frankfort on the Main" there were held the National games in which five thousand men were gathered for competition in all kinds of Gymnastic events. The games lasted three days. All countries were accorded the same treatment. They were looked upon as one people. To this spirit of rivalry has gradually been added the incentive of international contests of more or less celebrity such as the Henly Regatta, Tennis and Athletics, among the clubs and colleges, and out of these arose finally the idea of reviving the old Olympian Games. This idea once conceived, needed no argument to bring conviction to the athletic world. It appealed irresistably to all lovers of manly sports. The very name of Olympia brought before the imagination forms of classic heroes who met their opponents in the arena, in honorable manly contests and carried off the palm of victory amid the plaudits of the assembled thousands. We can not resist the conviction that ambition thus aroused to gain the coveted prize was one of the means of bringing the humanity to its highest development, and that in the ancient Greek we have the ideal of physical beauty. The result of the suggestion was that in April 1896 the Pan-national contest known as the "Revival of the Olympian Games" was held in the ancient stadium at Athens. Ten of the leading nations of the earth were represented, and we as Americans can be justly proud of the fact that the United States carried off more prizes than any other nation. We gloried in the success of our champions, and proclaimed the success of the Olympian games, in reviving the spirit of friendly rivalry, of awaking national pride and consolidating peace and friendship among nations. We rejoiced too in the stimulus given to athletic sports and to the cultivation of physical prowess and vigor. This is all very well in its way, but the question arises what is the effect of this training and effort on the individual contestants? What does the physiologist say? Is it true that the benefits are obtained only by the sacrifice of him who takes part? There was printed in newspapers a few months ago an article stating that the young man who won the world championship in the middle distances running, at home and abroad, was rejected for a position in the police department of New York City on account of an enlargement of the heart. If this is true how many of our young boys from fifteen to twenty years of age are sacrificed who drop completely exhausted in the latest craze of the Marathon Races; a race which saps all the vitality, in the course of fourteen to twenty-six miles. Those who are conversant with the history of ancient Olympian sports are not surprised, for it tells us that not a few died through their efforts for this prize. A medical journal in an editorial on the physiologic cost of a boat race, suggested by the recent Oxford and Cambridge race, says: "Speaking as judicially as possible a physiologist can not but express the conviction that every man in the two boats, except perhaps the two coxswains, must have been to some extent injured. In a definite number of cases the injury is lifelong to individuals, and in every race every man can hardly fail to be more or less the sufferer for a longer or shorter time." We have but to read the newspapers to see the list of casualties caused by the game called "Foot Ball" as it is played in all our higher educational institutes of today. These arguments do not apply to all athletic games to the same degree, for in none of them except perhaps the long distance run and bicycle races (also scorching for any length of time, which is fortunately a thing of the past) is the strain kept continuously at the highest possible tension for so long a time.

But the disastrous effect of overtraining and the supreme effort of the contest apply with equal force to all. Train as systematically or as scientifically as he may the supreme moment of the final struggle is as a rule too great a strain for the heart or blood vessels and the record-breaker then and there too often puts the seal of a shortened existence upon his life. The records of insurance companies show that a surprisingly large percentage of athletes, foot ball players, sprinters, fast bicycle riders and strokes in the crews, have weakened hearts, or diseased kidneys, or both. Recognizing then the fact that indiscriminate competition is often dileterious to those who take an active part, is it fair to encourage the young man to enter a contest and take upon himself these risks? These games are restricted to amateurs, and in this country at last amateurs are to be found mostly in schools and colleges. The amateur is not like the professional who has no other ambition in life beyond his athletic success. The contest to the amateur is but an incident in his scholastic career. If this training and experience fitted him the better to meet the demands of his future career it would certainly be a desirable preparation, but the average school or college athlete sooner or later enters one of the professions and has nothing in his daily life to keep his over-developed heart and kidney, or over-developed muscular system in condition. He is less able to meet the nervous wear and tear of a sedantary life than his more equally balanced but less athletic comrade. From the standpoint of the physiologist it must be conceded that the majority of our amateur athletes are too young and immature to subject their nerves, muscles, and heart to the strain of a severe athletic contest.

The aim of the North American Gymnastic Union is to develop the body in all its parts, not to make specialized athletes, but to develop good strong healthy men and women fitted for life's battles.

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Attached to the army of Norway is a corps of skaters armed with rifles. They can be manœuvred on the ice or snowfields with a rapidity equal to the best trained cavalry. (From Health, London.)

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

NEW FOOTBALL RULES DISCUSSED.

Gridiron experts from all the big colleges in the East as far south as Vanderbilt University, Nashville, Tenn., attended the meeting of the intercollegiate football officials at the Hotel Manhattan, New York, Sept. 17, 1910. The meeting, which was public, was presided over by Chairman Walter Camp, of Yale and was called for the purpose of interpreting the rules adopted after many executive sessions in New York and Philadelphia last winter and spring.

Several knotty problems arose when efforts were made to put the new rules into practice, and to solve these the meeting was called. One of these was rule No. 3, the language of which mystified some of the coaches. This was settled when it was made clear that a player removed for a rule infraction cannot be returned. But it was not settled what to do with a player removed because of injury. Whether he may be returned at a later period is yet to be settled.

The Rules Committee forgot to impose a penalty on the side whose guard receives the ball in a snapback, as forbidden by section 4, rule 15. Mr. Camp said that the committee would impose a penalty of five yards in such a case. Any player—save a guard—may receive the ball in a snapback after the ball has been put in play by any player on his side.

The word "caught" in rule 18, section 3, was changed to read "touched." This made the section read:—"Players of the side which put the ball in play after they have crossed the line of scrimmage may not in any way interfere with their opponents until the ball has been touched by a player of either side, except bonna fide interferers in an attempt to advance the ball by a rush."

Rule 20 forbids a return kick of any sort, but Mr. Camp said that the subcommittee would be asked to revoke it. Until the rule is rescinded it must be observed.

—W. C. Fownes, Jr., of Pittsburg, won the sixteenth amateur golf championship at the links of the Brookline, Mass. Country Club Sept. 17, by defeating Warren K. Wood, of Chicago, 4 up and 3 to play. It was Mr. Fownes' tenth attempt to gain the title, but heretofore his nearest approach to the honor had been the bronze medal of the semifinalist in 1905 and 1907.

The cards were:

Fownes—Out	4	5	5	4	5	5	5	5	5 — 43
Wood—Out	5	4	5	5	3	4	3	6	6 — 41
Fownes—In	3	5	4	5	4	5			
Wood—In	3	5	5	4	6	5			

Bye holes not played.

—Three more records of long standing were recently broken in New York City. These records were for the 75 yd. low hurdle and the 56 lb. weight for height and the 5 mile run.

The low hurdle record was lowered by John J. Eller of the Irish American A. C. from 10 4-5 sec. made by Hugh H. Baxter at Rutland, Vt. twenty-six years ago to 9 2-5 sec.

The 56 lb. weight throwing for height was raised by C. E. Walsh of the New York A. C. from 16 ft. 3/8 in. made by Pat. McDonald to 16 ft. 2 7-8 in.

The record for the 5 mile run held by Eddie Carter for 23 years was lowered by George V. Bonhag from the Irish American A. C. from 25 min. 23 3-5 sec. to 25 min. 9 1-5 sec. thereby chopping off 14 2-5 sec. from the previous record.

—Yale and Princeton divide this year's college lawn tennis honors, the blue winning the singles championship and the orange and black taking the doubles title. The final rounds in both events were played recently and were witnessed by large crowds of spectators around the courts and on the porch of the Merion Cricket Club's home in Philadelphia.

In the singles R. A. Holden, of Yale, defeated A. H. Sweester, of of Harvard, by 3 sets to 1 in a match replete with good playing, but the doubles were dissapointing, so far as championship play is concerned, Deane Mathey and B. N. Dell, of Princeton, experiencing little difficulty in disposing of R. Evans, Jr., and F. Goodhue of Yale.

Sweester took the first set from Holden in the singles, the latter apparently feeling out his opponent's game. The Yale man steadied down in the second and third sets, using his chop stroke to advantage and covering his court with agility. In the fourth set Sweester made a game fight, taking the first two games. Holden pulled up even and it was nip and tuck after that until six games all had been played. Here Sweester seemed to tire and Holden, playing with increased vim, ran out the two necessary games and the match.

The results make the point standing on the championship trophy as follows:—Pennsylvania, 6; Yale, 5; Harvard, 5; Princeton, 4. Seven points are necessary for permanent possession.

The summary:—

Singles.—Final Round—R. A. Holden, Yale, beat A. H. Sweester, Harvard, 3—6, 3—2, 6—3, 8—6.

Doubles.—Final Round—D. Mathey and B. N. Dell, Princeton, beat R. Evans, Jr., and F. Goodhue, Yale, 6—1, 6—4, 6—4.

HARVARD SUMMER SCHOOL.

—The Harvard Summer School, which opened July 7th, closed on August 11 with the usual final demonstration. This the twenty third year of its existence and throughout has experienced a steady growth to which past session has also added its increase in number of students over last year. There were registered 170 students, 110 women and 60 men. Of these ninety were taking the full course, 4 only the theory and 76 only practice. The teaching staff besides Dr. Sargent and Mr. Schrader numbered 11 lecturers, 22 instructors and 14 student assistants. There were graduated this year 14, all having completed the required 4 years work. Among these were graduates from the Sargent Normal School, Boston Normal School, Normal College of the North American Gymnastic Union, and the Springfield Training School, all receiving credit for the work done in those institutions finishing their work at Harvard in either one or two summers. Four very successful sociables were held, which helped much to weld together this congenial student body into a circle of friends, all of whom acknowledged that the end came all too soon.

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BOOK REVIEW.

—HALTUNGS-VORBILDER. MODEL POSITIONS, by Dr. F. A. Schmidt and Karl Mueller. Ten tablets, each about two feet square, showing in thirty-two illustrations the principal gymnastic positions both in their correct and incorrect forms.

The drawings are admirably executed and will be a great help to all teachers of gymnastics in schools and associations. The publishers, B. G. Teubner, Leipzig, have had the positions prntd on paper as well as upon papyrolin. This allows them to be hung up in the gymnasium or teachers' office. They are highly recommended. Mailing price on paper $1.60. Mailing price on papyrolin $2.25. To be had from Mind and Body, Herold Building, Milwaukee, Wis.

—SCHWIMMRETTUNGS-TAFEL. LIFE SAVINGS TABLET by Dr. F. A. Schmidt, Bonn. In his usual practical manner Dr. Schmidt on a large sheet of about three by four feet shows by means of eigth very large drawings 1) how a life-saver should free himself from the grip of the person he is trying to save, 2) how to bring the person to shore and 3) how to resuscitate him. The drawings are clear and well made. Published by B. G. Teubner, Leipzig. The tablet is highly recommended to all swimming clubs, gymnastic and athletic associations, normal schools, as well as to all leaders corps. Mailing price on paper $1.00. Mailing price on papyrolin $1.50. To be had from "Mind and Body," Herold Bldg., Milwaukee, Wis.

—"THE GIRL FROM VERMONT" by Marshall Saunders, 248 pages 5½x8 inches, illustrated, published by the Griffith and Rowland Press, Philadelphia, Pa. The book, a novel, is written in the interest of playgrounds. The heroine is the teacher in a vacation school who enters upon a crusade for childrens' playgrounds. Mailing price $1.35. To be had from Mind and Body, Herold Building, Milwaukee, Wis.

—"AMONG SCHOOL GARDENS" by M. Louise Greene, M. Pd., Ph. D. 388 pages, 5½x8 inches, illustrated, published by the Charities Publication Committee, New York. Mailing price $1.25.

An exceedingly interesting and thoroughly practical book on "school gardens," including those conducted by associations in public parks and at the homes, as well as gardens carried on in connection with regular school work. Based upon personal study and observation, by the author, of school garden work throughout the United States and Canada. Beautifully illustrated with nearly one hundred full-page and smaller half tones, besides plans and diagrams. The book can be warmly recommended to all who are interested in school gardens. To be had from Mind and Body, Herold Building, Milwaukee, Wis.

—"THE FOUR EPOCHS OF WOMAN'S LIFE" a study in Hygiene by Anna M. Galbraith, M. D. 244 pages 5½x8 inches, published by W. B. Saunders Company, Philadelphia, Pa.

This book deals with the four epochs of woman's life, i. e. Maidenhood, Marriage, Maternity and the Menopause. Each part has several chapters. In the preface the author says that "Perfect health is essential to perfect happiness." The greater the knowledge of the laws of nature, and the more closely these laws are lived up to, so much nearer "ideal" will be the health and the happiness of the individual. ...... "It is little less than criminal to allow girls to reach the age of puberty without the slightest knowledge of the menstrual function; young women to be married in total ignorance of the ethics of married life; women to become mothers without any conception of the duties of motherhood; other women, as the time approaches, to live in dread apprehensions of "the change of life;" and many women unnecessarily to succumb to disease at this time." The book can be heartily recommended to all teachers; both married and unmarried. Mailing price $1.65. To be had from Mind and Body, Herold Building, Milwaukee.

—INDIAN CLUB EXERCISES AND EXHIBITION DRILLS. By H. B. Camann, Teacher of Physical Training, McKinley High School, Chicago, Ill. Mailing price 75 cents. To be had from Mind and Body, Herold Building, Milwaukee, Wis.

This manual on specialized gymnastics is, as the author states in his preface, "the result of many years of experience in high-schools, college, and normal school" and intended for the use of teachers as well as pupils as a guide and text book.

Considering the dearth of practical and methodical literature on Indian club exercises in the English or any other language, this book supplies a long-felt want and should receive a hearty welcome by everybody interested in this special gymnastic art. The systematic grading of the rich material, the simplicity of its arrangement according to pedagogical principles, together with the clearness of expression and nomenclature, give evidence of the mastership of the author in dealing with his subject.

The text is profusely supplemented by pen and ink illustrations, which further enhance the value of the book and serve to make its lessons easily understood, even by beginners.

A number of exhibition drills prepared by six well-known teachers of physical training of Chicago, St. Louis and Pittsburg have been added as an appendix and should prove the high adaptibility of Indian club exercises. for class performances and public exhibitions. Mr. Camann's book is a creditable addition to the literature of practical educational gymnastics and should be in the hands of every teacher of physical training.—Dr. H. H.

MIND AND BODY

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THE HEART.

A sketch by Dr. Grunert (Bremen).
Translated by Lorle Stecher, Philadelphia.

The beneficial effects that systematic exercise and sports undoubtedly have on the development of the body are, for the most part, lost as soon as the maximum functioning power of the organs is reached, i. e., as soon as any organs are worked to the point of exhaustion. This refers to such exercises as depend not upon an instantaneous unfolding of strength and skill, but upon endurance. If exertions of this kind are indulged in to excess, one following another without a sufficient pause for rest, there may result an actual injury, more or less distinctly perceivable. The sound and healthy organ with normal functioning power may be exerted to its maximum without injury, only when such exertion is timely and suitable and when it has been carefully prepared for.

The question of whether or not an organ is strong and healthy cannot be decided with certainty by one's own sensations; a physician's judgment is necessary. Military officials have long recognized this. In field service soldiers are often taxed to the maximum of their strength; therefore all the sick and the weaklings are previously separated by medical inspection, from the class of the strong and capable. In the sports too, yes even in some gymnastic events, individuals sometimes work up to the limit of their strength. It would, therefore, be a very good and suitable thing if the participants were, from time to time, examined by a physician and above all if they were very careful not to overexert themselves.

The voluntary muscles are not so liable to harm, for they are always given opportunity to recuperate; in sleep especially, they become entirely rested. But there is one muscle that is continually active, even in the deepest sleep, namely the heart. This muscle alone has no rest except the rest of death; therefore, the measure of strength that nature gave it must be carefully husbanded. To be sure this muscle too can be strengthened through exercise and proper training. If, however, there is one organ that is hurt by over-training, it is the heart.

Persons whose voluntary muscles are weak run no great danger of injuring the heart through bodily exertion; for their arms and legs will refuse to work much sooner than will their heart, which is, in comparison, the best developed muscle—the only one, in fact, that remains active during bodily inactivity. Different is the case of the strong person whose voluntary muscles have been developed from childhood, who has, through exercise, obtained such control of himself that he can, at all times, use these muscles to their utmost. He thinks that after a short rest following heavy exertion, he is entirely equipped for new deeds. He does not heed the quickened pulse—does not think of the fact that directly after the bodily exertion, the heart has still another great task to perform, namely, that of bringing fresh material in place of the waste, and carrying off the effete matter, the consumed nerve and muscle substance. Into the finest ramifications of the arteries this force pump must press the blood that has been renovated in the lungs by the addition of fresh oxygen. And then this pump must suck up from the veins the blood containing waste matter, in order that the same may again be cleansed in the lungs and kidneys. This process of expelling poison is of the highest importance—for these are real poisons, these fatigue poisons that escape through the breath and through the kidneys; these are heavy poisons of narcotic action like morphine and opium and drugs of this sort. To be sure natural sleep too is a befogging of consciousness through accumulated fatigue poisons which are, however, efficacious only until the inner organs, especially the heart, have performed their task of expelling this poison from the system. Therefore, athletes, have a care for your heart in exercises of long duration, so that we may not have to mourn your premature death by heart failure.

There are three other classes of persons whom I must also warn, that they may show foresight in endurance exercises. These are: first, boys and youths under 20 or perhaps 24 years with bodies not yet thoroughly developed.

Many physicians have discovered the fact that young sportsmen and prize athletes almost all fulfill satisfactorily their first military duties. When, however, these soldiers are put to the greater test of the maneuvers, an astonishingly large proportion show themselves to be unfitted for field service because of heart failure. Bicyclists are said to be especially affected by this disease. Therefore let us be careful of the hearts of young men. The heart of a young person is already greatly taxed by the strain of growth and is therefore more subject to over-exertion than is that of an adult.

Very similar to this group is the second—that of nervous persons who on account of their disposition are easily excited or who are, in their environment, exposed to great nervous excitement. For these persons frequent or moderate bodily exercise is salutary, but forced exertion is extremely harmful, since this exercise is begun when the heart is already more or less strongly taxed.

To the third class belong drinkers. The stimulating drinks to the enjoyment of which they abandon themselves, not only incite the heart to increased activity through the alcohol they contain, but also make greater demands on the heart because of the great fluid mass. If now, the sportsman or athlete wishes to use his voluntary muscles in an endurance exercise, not only without harmful effects, but with positive benefit, he is decidedly foolish if he needlessly overtaxes his heart as he certainly does by drinking. His strength will then avail him nothing and this incapacity will be in direct proportion to the development of his voluntary muscles. The heart will then be, so to speak, simply overpowered by the voluntary muscles. Drinking bouts after strong muscular exertion should also be avoided, for the reason that when the limbs are at rest the heart also should be spared as much as possible, and not be spurred on anew.

Finally let me say yet one word in warning to old gentlemen—and among these one must, I suppose, count the great majority of those who have carried their vigor and health over into the fifties. Such a body may no longer be strained to exhaustion. Its capacity for the execution of strenuous labor is on the decline. Let these gentlemen consider that other very serious duties may have to be performed by the old body, for example, when high fever rages in the arteries and taxes the heart to the utmost. Is it not a melancholy thing to see vigorous men of fifty years dying of ordinary inflamation of the lungs merely because they had neglected to spare the heart at the proper time, and had used the daily measure of strength day by day to the last dregs? The wise man puts aside a penny for the needs of old age. Not alone of money is this true.

WHOLESOME VERSUS UNWHOLESOME EXERCISE.*

By Albert E. Sterne, M. D., Cincinnati, O.

It is particularly in the so-called athletic branches of sport during the intermediate developmental years that the most disastrous effects of team life are to be noted, not only in immediate physical and mental collapse, but oftener still in the remote anatomic, physiologic changes of after life.

I realize perfectly that in speaking upon this particular phase of this subject I am discussing what has become a vital problem, one that affects all classes and all communities, as well as the individual particularly referred to, namely, our growing boys and girls.

Before analysing the situation as it confronts us today, I want to make my own personal attitude a matter of record. Toward athletics in general, and notably toward a few in particular, I am not in the least opposed. On the contrary, I think I can safely be called a warm advocate of every form of sport followed in the true spirit, and there can be but one which any right thinking man or woman could possibly commend—the spirit of manliness and fair play—within reasonable limits and at the proper time of life.

In discussing this question it is pertinent to ask three things; First, is the proper spirit manifested in the athletic contests of the present day; second, are these contests held within limits conducive to the development of the best individual and racial traits, both physical and mental; and third, are they carried on at periods of life calculated to safeguard and foster those best interests.

To the study of these questions we should bring both empiric and scientific knowledge. Experience and observation will serve to establish empirical data: instruments of precision will register beyond refutation scientific facts. As to the first question, I believe we can fairly assume that, in the main, college, school and club contests are waged in this and other countries in a sportsmanlike way. The spirit manifested is to win, but to win fairly, honorably and without recourse to sheer brutality and savagery. Of course isolated instances of the latter sort are common enough, even in our college games, but they only serve to buttress the rule. Certain branches of sport like football and boxing have come to be condemned as essentially savage and brutal. Football as a sport is essentially manly, and while brute strength and brute skill are intrinsic to the game, straight brutality is wanton in every instance.

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* Abstract of a paper read at the Indianapolis meeting of the therapeutic section of the Physical Education Association.

To the second and third queries I am inclined to answer flatly, no. Emphatically, no! I believe the present situation as a whole is distinctly bad, and for the following reasons: Strenuous efforts call for physical and mental endurance, and this is gained only with early adult life and is preserved only through a short space of years at best. Anything, any sport or system of sports which tends to impair this endurance or to shorten its period of existence is unwholesome; it is deleterious to the individual, and through him, manifolded, it becomes deleterious to the race and to the future of the race. This much will, I believe, be granted. Now how do we know that such deleterious effect is exerted, taking into account not at all, the individual accidents or series of accidents which may maim, cripple or kill at the time or in the immediate sequence, any limited number of persons.

The normal balance of health is practically maintained through the medium of the anatomic or sympathetic nervous system. One of the most important, if not the highest function of this system, is the maintenance of the delicate regulation between the two divisions of the circulation, to wit, the central pump or heart and the peripheral pump, comprising all the blood vessels, notably the arteries, big and small. The blood vessels of the body should not be looked upon as inert pipes through which the blood is pumped by the heart, but as elastic tubes having contractile and expansive powers of their own, by virtue of their innervation from the sympathetic. Heart and blood vessels act synergistically and normally; the sum total is a delicate balance.

The heart responds rapidly and automatically to any reasonable demand made upon it. With equal readiness, the blood vessels, in their turn, answer the call. In other words, the whole circulatory system acts, each in its own phase of the pumping, as a unit. Ordinarily this physiologic action is attended by only a slight rise in dynamic force or tension, and when healthy, there occurs a rapid restoration to normal exertion, provided the demand has not been too great, too prolonged or too oft repeated.

During the developmental years the comparative demand upon the heart is pretty well up to its limit all of the time, for with body growth there is constantly increasing tissue formation. This new tissue requires nourishment and this can be conveyed only through the circulation. After what we may term "full growth" has been reached, there is relatively and actually less strain placed upon the heart, so that it can more rapidly respond to any unusual, yet reasonable, demand made upon its power. During the years of adolescence, however, while the heart is being taxed to its capacity most of the time, it cannot be safely asked to do too strenuous service. The growing boy or girl who complains of shortness of breath, pain in the side, and palpitation upon moderate or prolonged effort, instances this dictum clearly. Examples of this kind are so common as to require only the merest mention. After the developmental period, such phenomena becomes less frequent, even though the demand upon the heart and blood vessels be considerably greater.

By means of accurate apparatus, the tension to which this circulation is subjected can be measured and any increase or decrease from the normal be registered. Increase in tension, that is, force for the heart and elasticity for the arteries, means increased muscular effort and expenditure on the part of the heart. This the organ can safely give if the demand be not too great or too constant, but only then, for it must be remembered that the heart is a muscle, indeed, a very powerful one, and like every other muscle, it adds to its intrinsic column through use, that is, it becomes enlarged. Once this condition becomes established the heart continues to exert undue force automatically and drives the blood too rigorously against the arterial walls, to the lasting detriment of the latter, which, striving to maintain their normal compensatory relationship, increase their own muscular coat, and herewith is established an abnormal condition, a true pathology, a real vicious cycle. Even in minor degree, such a condition cannot be regarded lightly, and baneful effects in after life are pretty sure to follow. Lowered resistance and lessened vitality are pretty certain sequelae. In major degrees, the effects are really disastrous. Here we see often excessive idiopathic hypertrophy or essential heart enlargement due wholly to the constant strain which had been placed upon that organ, either at a period when it had all it could reasonably do to fulfill its normal duty, or after this period had been passed, by whipping it to activity beyond its potential capacity. Sooner or later, every hypertrophic muscle undergoes degeneration and every hypertrophic heart does the same thing, yet even if it did not, the loss of the elasticity of the arterial walls, the "vital rubber" of body tissue, would alone bring about general inanition.

Purely on medical grounds, therefore, I am opposed to such form of exercise for growing boys and girls. In my opinion, strenuous sports or athletics of every description which place an abnormal demand upon the circulation should be emphatically condemned. They should have no place at all in graded schools, intermediate schools, public or private, and be permitted only under rigid physical scrutiny, even in the under graduate classes of higher institutions of learning, associations or clubs, when the participants are not practically full grown, and developed beyond the average.

Moreover, this lack of scrutiny by constant authority is most apparent just when it is most essential for the growing and half-grown boys and girls.

Of all athletic sports, doubtless, football* makes the greatest and most constant physical demand. In minor schools it should be forbidden, not merely because of accident, but chiefly because it is a sport for no weakling, even though grown. Football is a man's game in every sense, and then only for men above physical par.

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* In the debate following the lecture, Dr. Sterne's statement that footbal makes the greatest physical demand was questioned. It was pointed out by several speakers that basketball was the most strenuous game, and that this game did more harm to growing boys and girls than football. Dr. Sterne's statement about the bad effects of rowing (on college men) was also questioned.
—Ed.

That what I have stated with regard to football is true, I believe experience will substantiate. It is, a notable fact that men of powerful physique naturally, who have been in their day famous athletes, show a remarkable lack of resistance in later years, and frequently become victims of disease which they should have been expected safely to weather. Instances of this sort have been isolated. Indeed they have occurred frequently enough to ask the reason. Why should men, whose natural physical endowment was above par and who had been famous for their prowess—gridiron stars, crack oarsmen, sturdy tug-of-war's men, splendid runners and ball players, record breakers in field sports—succumb to maladies which their weaker brothers readily conquer?

It can not be fairly assumed that the type of disease was so much graver in their cases. We must look to other causes than this, and the heart tells us why. That organ had been long overtaxed and had, after the years of strenuous physical effort, been abnormally large and in turn became degenerate, so that it could no longer be relied upon to fight the battle which it might safely have waged without the previous strain.

Other forms of sport, baseball, rowing, track team, tennis, etc., make their demands, too; some strenuous, some comparatively mild. Indulged in within reasonable limits, all of them have distinct advantage, strictly this side of constantly raised arterial tension.

The four mile regatta is unquestionably a terrific physical strain, which only rigid training and discipline make safe, and then all too frequently only seemingly so, for the participant. Look over the personel of our college crews, magnificent specimens of young manhood, undergoing months of careful training and preparation for a single contest. The very best material, they are, usually coached by experts, watched over carefully, and yet it is now a question whether the fourth mile of the race should not be eliminated, because it adds tremendously to the strain. That the after health of these picked men is being seriously jeopardized is becoming recognized, because experience is forcing that recognition, and for no other reason.

The five-mile tug-of-war is also a strain of magnitude, as any one who has been a member of the team can testify. From my own experience in this sport, as well as upon the football field and upon the water, I should say that the tug-of-war is anything but wholesome, even for the sturdiest. Short and long distance running and even the heavy field sports, like hammer throwing, are often too great a strain for some hearts.

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R. Schmincke (Bad Elster), concerning the affect of baths on the size of the heart, writes in the "Fortschritte der Medizin, 1910, No. 25:—that the experiments, exclusively made by means of Albers-Schonberg Teleroentgonography, resulted in the following observations: hot water or moor baths (above 38° C.) almost regularly showed a smaller outline of the heart; the same is the case after hard labor. Lukewarm baths have no effect on the size of the heart. Cool or cold water—or carbondioxide—baths usually have but a small effect on its size, but in some of the cases an enlargement of the heart has been noticeable. This, however, is less marked than the decrease in size after hot baths. But all these changes are temporary. They cannot be applied for judging the therapeutic effect of the baths. After a number of baths a lasting decrease in the size of the pathologically hypertrophied heart could be claimed in but a small number of cases.—*Zeitschrift für Physikalische und Diaetetische Therapie, Leipzig.*

PHYSIOLOGY VERSUS ANATOMY.*

By George V. N. Dearborn, M. D., Ph. D.,
Tufts Medical and Dental Schools, Boston, and Sargent Normal School, Cambridge.

Any one, and especially any instructor in the broad field of "physical" education, is apt to feel in his subconsciousness, if not by chance in his more obvious thoughts, the general inadequacy of our present knowledge of anatomy to really explain the actual bodily activity of the individual. Ex-officio, so to say, anatomy ignores that universal impulse to activity that underlies physiology. But, more particularly, the information at hand about sense organs, nerves and nerve centers and their respective relations to muscle and epithelium seems still utterly inadequate to explain the continuous and multiform life-activities of a man. It is much as if we expected a six-year-old boy, or a man for that matter, to understand and appreciate the imposing production of Haendel's "Largo" on a great pipe-organ from a close study of the electric cable between the instrument and the keyboard plus observation of the working of the air-pumping mechanism. Of the really "most essential" parts of the neuromuscular apparatus, the co-ordinating, unifying arrangements in the "centers," we still know comparatively little. We have acquired of late, to be sure, something of the letter, but practically nothing of the spirit, of the relations of this, the mechanism of efficiency, to the actual combined activities of the individual. This important discrepancy after all these busy years of elaborate histologic and physiologic and neurologic research is not a little discouraging. For a true understanding of "things as they are," perhaps our point of view is somewhat wrong—who knows?

Slowly, but progressively, it is true, the wondrous maze composed of neural pathways in the nervous system, contractile units in the musculature, and secretory elements in the epithelium is being traced out. Of late, especially, have several steps been taken through this baffling labyrinth, and more and more clearly appear the relations of its parts to always obvious motor (and mental) activities of the man or woman. Very many acute and persistent minds of many different local interests and many clever hands and eyes are contributing to this slow but certain progress—histologists, anatomists, physiologists, physical educators, chemists, clinical neurologists and psychologists. Whether the facts and theories they report agree or not at once, all come to the same sure mill, and the grist helps the advancement of true learning. And yet, between what we see in the living child playing so actively about us and what we know of his nerves and muscles, there is somehow a yawing gap that seems scarcely to contract. Is it a case of missing the forest because of the trees?

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*Reprinted from the Boston Medical and Surgical Journal, May, 1910.

One of the most conspicuous tendencies gradually evolving of late out of this multifarious perplexity we may denote as assimilation. In all physiological fields as ,well as in this particular discussion of the mechanism of efficiency is this tendency evident, in part, certainly, because the broad view, the result of synthesis, philosophy, comes last in science, but in part, too, surely, because physiology has at some pains to unite again what anatomy and chemistry have separated for purposes of better description. The busy mechanic working in his shop exhibits totalities of action, results, real animal movements, simple yet indescribable, and these present problems to the physiologist which even assimilations of many kinds will none to soon expound. But they are none the less along the right road though the guide boards be few and dim.

Without reference to the obsolete notion of the specific energies of nerves, it may be pointed out that the afferent and the efferent are more alike both in themselves and in their uses to the organism than the pioneer work of Stephen Hales and Charles Bell on the spinal cord and its roots would allow us to believe. The immediate effect of the action of both directions is a change in molecular movement of some sort, the motor fibers often (namely in the metabolic maintenance of tonus) doing only this on a muscle and the "sensory" neurones having this as their universal effect in the centers to which they conduct. In the second place, not all so-called afferent nerves are afferent, nor all "efferent," efferent. This admixture extends even to the roots of the spinal cord, and elsewhere is even much more conspicuous. And of course, in many localities the terms mean little or nothing in any event. Again, either kind of impulse may either actuate or inhibit. Finally, so far as the essential conciousness, more or less related to them, is concerned, certainly most so-called sensory impulses are subconcious, coconcious or even unconcious, perhaps. On the other hand, it is more and more proper to teach that to the passage of at least the cerebral efferent or "motor" impulses some modicum of conciousness is attached. Thus by such considerations it seems necessary to somewhat modify the general ideas denoted by "sensory" and "motor" as applied to nerves, and to a less extent the meanings of "afferent" and "efferent." Anatomically and otherwise the expressions remain useful so long as we do not push their definiteness too far, while for the relations of body and mind, this neural phase of assimilation is, of course, fundamentally essential.

In discussing the actions of nerves, one soon learns to think and to speak of them as nervous influences exerted in various ways rather than as definite impulses or currents along separate neuronal paths. This is only a sign of recognition of the undoubted fact that no neurone ever, save under experimental conditions, acts singly. Rather have we to think of the impulses as combined by mass-action into an influence along ever-unique nerve highways immensely complex, and, as it were, as soaking into the maze of nerve-paths to which it goes or into a group of muscle-fibers or muscles or glands. Here is assimilation in a general sense, and it certainly represents the facts better than any habit of speech that emphasizes the separateness of units that never work separately. Rather do they work in groups that are strictly functional and not anatomic, pass the dendrites and axones through whatever nerve trunks they may for anatomic convenience.

Even the (efferent) motor end-plates and the (afferent) kinesthetic sense organs are not functionally so very different, for both receive influences of energy in the ever-returning circuits of the neuromuscular mechanism (noted somewhat below). The gross structural similarity of the neurotendinous end-organs and even of the muscle spindles, so-called, to the motor end-plates is seen at a glance.

One commonly speaks still of the large cortical areas on the sides, rear, and front of the brain by the name Flechsig gave them, obviously for lack of something more definite to call them, for they give no active sign when stimulated by electricity; he called them, "association areas." How they can differ from the remainder of the cortical maze in this respect it is hard to imagine, and surely if the central nervous system as a whole is anything, it is a vastly complex association organ. No parts of it evidently are more characteristic in this respect than the motor areas about Rolando's fissure of the regions of "sensory" neurones whose collaterals help so much to organize the cord. In short, the tendency is to modify materially the localization idea, based originally on osseous "bumps" and a little later on gross experimentation. Here is a form of assimilation whose doctrinal importance is obviously large.

In general we are beginning nowadays to consider the nervous system an indescribably complicated fabric, with influences of a vastly complex or composite kind making their way through it continually more or less in practically every direction. The effect in each case is then more or less of a resultant, a balance of numerous differing influences, some antagonistic and some allied, but all fusing into some resulting effect.

When we consider, however, that not only animals, but plenty of plants, possess the essentials of all the motor faculties of ourselves,—the vertex of evolution,—our opinion as to certain details must somewhat alter. Every one knows, if we would think, in general what a capable sort of organism many plants possess and how many vital things they can do and do them well, as well, indeed, as we could do them. Inspired by the same impulse to activity as that which impels animals, the protoplasm of the plant is conductile as well as contractile, and that inherently. The so-called sensitive plants exhibit true neuromuscular reactions, reflex action, but without the help of either nerve or muscle. The complete and efficient reflex closing of the motor leaf organs of Dionea (the "Venus's flytrap" of the Carolina mountains and elsewhere) when the sense organs of this surprising instrument of living food-apprehension are stimulated, is a striking illustration of generalized motor efficiency where exist no separate nerves or individual muscles. Again, if only a small fraction of the reactions described and illustrated by Bose in his work, "Plant Response," as occurring in the sensitive plant Mimosa are correct, we have an extraordinay similarity between the movements of plants and those of animals. Yet Mimosa has neither kinesthetis sense organs, dendrites, nerve cells, axones, collaterals, teleneurites, sarcostyles or sarcomeres. Green sets forth the nervous and motor efficiency of plants much more scientifically.

The same process of assimilation in use that has been discussed above in regard, especially, to the nervous functions and conditions is in progress also in our understanding of muscle. Philosophically speaking, contractile tissue is, like the sense organs, a part of the nervous biological system, these three each being an indispensable portion of the mechanism of efficiency. The chief of the two functions of the musculature (constituting half the mass of the body and practically universal in it) is to shorten, and in whichever "kind" of muscle (voluntary, cardiac or vegetative) this purpose is carried out, just as the nervous system everywhere performs its single duty of co-ordination. The other function of muscle, that of heating the body, mostly by carbohydrate metabolism into carbon dioxide, is likewise common to all three varities of contractile tissue, and is performed under very similar conditions, although the cross-striated muscle is naturally the most effective, owing to its greater mass. The chemical composition and, in consequence, the metabolism is nearly uniform in the three kinds. The chief difference (Halliburton) is in the proportion of nucleoproteid present, smooth muscle (most nearly like undifferentiated protoplasm) having most of its substance, the heart a middle amount and voluntary muscle least,—differences of little functional significance apparently. The proportion of pigment varies considerably in the muscles of many animals, a fact that suggests important compositional differences that do not exist.

In the action-modes of muscle we are in the habit of seeing differences and even contrasts that tend to lessen with increasing real knowledge. If we search through the structures of the simpler animals, for example, the various species of ameba, stentor, paramecium, hydra, tubifex, etc., we can find many "steps" in assimilation and evolution between pseudopodia, cilia, myoids, myonemes, contractile epithelia and definite muscle of numerous kinds. Whatever the form or name, all these organs by contraction accomplish something. In a similar way, however unlike to our present perhaps rather gross seeing of the finer structure of smooth and cross-striated muscle, in certain cases neither abnormal nor even exceptional, the modes of action of these two approximate, here and there in the wide range of experimentation one finds the action of vegetative (smooth) muscle to be quick and accurate instead of slow and inexact and, if we consider the animal kingdom as a whole, these conventional differences tend distinctly to become inconspicuous. On the other hand, trained voluntary (cross-striated) muscle exhibits universally all the powers of vegetative muscle except the latter's rhythmicity. Even this is readily brought out under certain extraneous conditions, for example, in those frequent but unknown central disturbances that result in what we know as clonic spasms or convulsions. Again, one need only refer to the abundant research on the action of various osmetic salines (especially potassium acid phosphate) on voluntary muscles to be struck with the delicate metabolic or ionic balance between its rhythmicity and its non-rhythmicity. The discussion as to cardiac neurogeny and myogeny seems, in short, to apply to smooth and to cross-striated muscle quite as properly as to the contractile tissue of the heart.

There is no occasion to discuss cardiac muscle for our present purpose (because, for one reason, it is so limited in extent), except in its rule of action technically as "all or none." It need not here be said that this principle in its simplicty states that an intensity of stimulation that will make a quiescent heart contract at all causes a maximal beat. Keith Lucas, at least, maintains, as the result of special research, that cross-striated, voluntary muscle works on the same plan. In the fundamental doctrines of physical education this claim is obviously of no little importance, but there is no need for us here to discuss this matter either. Our interest in the theory is confined to the width of its step toward muscular assimilation. Inasmuch as no voluntary muscle or functional group of such muscles is structurally a contractile unit as the heart is, cross-striated muscle has for this all-or-none purpose to be considered as composed of functional groups of fibers, each group then representing this all-or-none principle so long known in heart action. Lucas found the frog's cutaneus dorsi muscle and its nerve to be suitably simple neuromuscular mechanism for detailed study in this particular. He found this little muscle to consist of from one hundred and fifty to two hundred fibers or cells and that the nerve serving it consisted of nine or ten medullated nerve fibers, of which one is afferent (from a muscle spindle?) and one or two sympathetic (vasomotor). Thus seven or eight efferent axones supply the contractile cells of this muscle with immediate actuating influence. In stimulating the muscle with thirty-four effective break induction shocks from a carefully calibrated instrument, each shock stronger than the preceding, in one typical case only four steps or degrees of contraction were obtained when the favorable effect of previous contractions was eliminated. In other words, the researcher finds reason to believe that amphibian skeletal muscle at least consists of functional groups of fibers probably as numerous as the motor neurites serving it and each acting on the principle of all or none. Proved true for muscle generally, we shall have here an important advance in the funtional assimilation of the different varities of muscle.

As is well known, not very infrequently people are met with who have more or less direct voluntary control over the heart's action, and every one's heart is under his direct control in some degree or other through emotional stress and strain or its opposite. Training makes this indirect government of the vital vegetative organs a matter of large account. But in addition to this, psychopathology and educational therapeutics, as well as the theory of voluntary movement, continually demonstrate that there is in some cases scarcely an assignable limit to the voluntary control that can be gained over the activity of vegetative (smooth) muscle by continued attention and effort. In the hypochondriacal, hysterical and similar conditions one sees only to often how stronly the compelled attention of depressing obsessions acts on the vegetative mechanism.

Such facts and considerations are only fragmentary suggestions from the mass of similar facts and considerations that might be cited to indicate the gradual assimilation of the kinds of nerve and of muscle respectively that are described and classed in the books as different. More and more clearly, however, can we see that the differences are adaptive and, therefore, superficial.

Besides the assimilations in the mechanism of efficiency there are integrations that may be spoken of briefly, because they tend in the same direction for the practical purpose of a real understanding of things

Facts that bear on functional, if not structural, unification or integration of the nervous system are obviously very numerous and in part involved in controversy, but several general matters tending in this direction may be suggested as briefly as possible here, matters namely that appear to be beyond the polemic stage.

One noteworthy instance of integration beyond hope of present unraveling is to be had in the complete control of the bodily epithelium and smooth muscle by the autonomic system, more often known still as the great sympathetic. This practically means a necessary unified control ot the vegetative life underlying and supporting all the other vital processes and "underneath" in the stream of consciousness of the individual. Here in this autonomic system are the great plexuses of the organism, competent but mechanical little brains controlling specialized functional groups of activities and, like the great brain, complex beyond all present description. For example, the seemingly tangled knot known to vulgar fame as the solar plexus, or the plexuses named for Auerbach and Meissner,—who will as yet trace out the numberless definite pathways through such mazes as these or tell exactly their devious relationships to the intricate secretory and contractile events of the abdomen? Such relationships between nerve masses and involved functions might be enlarged upon indefinitely, as it has to be, for example, in any comprehensive study of normal or abnormal behavior—the chief immediate subject-matter for study and elucidation by the psychophysiologist.

This complex but, in a sense, completely integrated sympathetic functional system is in the most intimate relations with the remainder of the nervous system—cord, cerebellum and brain—although the means of communication are indeed inconspicuous. The rami communicantes, white and gray, so called, are one means of this close association with the cord, etc., but the vagus and other-named anatomical nerve cables help in this integration of the sympathetic with the body at large.

In these two functional "sets" of nerves, sympathetic and cerebrospinal, are largely represented the basal biologic and personal characteristics of the man or woman, but who at present will work out the details of such a concomitance?

Here, too, in the habit-systems of the sympathetic and the cord is the most typical instance of group action to be found in the body, and each organic functional group or syndrome is a composite integration at present incapable of detailed tracing-out. We see and know the effects but are baffled and discouraged when we search the recesses of the immediate (neural) cause.

In the numerous circuits of the neuromuscular mechanism there is an as yet unsolved complexity of associated activities. To the newer comprehensive way of viewing this apparatus, every group of neuronal cells may properly be deemed a center of reflexion in the sense of the term now coming into use. In other words, every close association of neurones implies a circuit of active influences coming from stimulated sense-organs and going back again to the muscle for the gland perhaps?). Every peripheral sympathetic ganglion even in the various vegetative organs theoretically is such a "turning-back" place, for it is more and more clear that in part each organ determines, by secretion or otherwise, its own conditions of activity, is to a degree an autochthonic machine, its extrinsic nerves serving largely to adapt its processes to the total bodily good. All the more surely are the rounds of kinesthetic and then motor influences through the prevertebral ganglia of the sympathetic and perhaps those through the smaller ganglia of the "prevertebral cord" to be considered complex but unitary circuits—integrations. The classic reflex are through the spinal gray matter is the next step upward, while others similar in plan but progressively more involved extend into the head, one round through the medulla, one through the cerebellum and "hind-brain" and, perhaps, the internal gray nuclei, while the longest and complexest circuit of all, most conscious and most fully "voluntary," includes the reticulated maze of the cerebral cortex. No one thinks of these thus suggested, however, as literally separate circuits, for the very essence of a truly understood mechanism of efficiency is integration; but anatomic as well as physiologic evidence implies a general classification of this sort.

One need not here rehearse at length the modern point of view as to the relations of afferent influences and efferent in muscular control. The thickening fibers of contracting muscle stimulate by compression or in some cases perhaps, by distention (muscle-spindles) the numerous kinesthetic end-organs placed among them. These messages inward furnish to the motor centers the definite data indispensable for their proper co-ordination of the muscle fibers. Bell, Bastian and James long ago pointed out the likelihood of such control, but gradually now the details of the conditions are appearing.. If the claims of Lucas noted above (the all-or-none principle) be proven applicable to mammalian skeletal muscle, the chief objection to the universal acceptance of the plan is overcome, for now we may, at least tentatively, suppose that the kinesthetic energies arising in one all-or-none step-group of fibers stimulate through the motor centers the muscle-fibers of the step-group next succeeding in action. It remains to be determined whether or not the hardening and compressing muscle mechanically furnishes the afferent energy, and perhaps the whole energy, of these various neuromuscular circuits. Either the glycogen or the chromatin apparently provides this force, although the ionic doctrine recently set forth by Macdonald (the convergence-focus of many a research by many active brains and eyes and clever hands) suggests a basis of the nervous impulse far more complex, and, it may be noted for our argument, far more general in its originthan former data suggest.

This idea of functionally complete circuits round through every gray portion of the nervous system furnishes the most complete integration of which we have to remind the reader. It involves of course the practically perfect unification of at least the "motor" centers with the brain at large, and implies the arbitrariness and relative uselessness of the old-time complete separation of nervous impulses into sensory and motor. Just as no muscle under any normal circumstances ever is inverted singly, but muscles usually in large groups, often indeed practically all the muscles at once, so the brain apparently cannot be properly set off into disparate "regions" with separate functions. Only as we think of the central nervous system as the universal co-ordinator of all kinds of influences universal in the body all the time will we adequately realize the meaning of the close structural inter-knitting of the neurones.

Muscular integration is at least as complete as neuronal integration. The work of Mallory, e. g., and more recently of McGill has shown us how safe and proper it is to consider smooth muscle a syncytium or fabric of cells connected in various ways by bridges of contractile protoplasm. Functionally, the universality of vasomotion in the body exemplifies how perfect is the integration of smooth muscle in its action, and so, for example, does the co-ordinated activity of the alimentary canal. As for cross-striated or voluntary muscle, its structural integration is not conspicuous if we think of the unit as an anatomic muscle. It is, however, likely enough between adjacent fibers within the muscle-bundle. But functionally the integration of the voluntary musculature is sufficiently striking, although brought about apparently by the nervous system. These integrative principles need not be here detailed, for it is enough if we mention them as the reciprocal innervation of functional antagonists (Sherrington), the tonic innervation for a reaction basis (purchase), and the maintenance of bodily equilibrium. By these reactions necessary to ordinary activity practically the whole of the voluntary musculature is kept in continuous action.

(To be concluded.)

THE AMATEUR ATHLETIC FEDERATION OF COOK COUNTY, ILLINOIS.

In response to many requests for information about the A. A. F. of Cook county one of its members gives the following historical sketch:

The Cook County A. A. F. was formed December 16, 1908, with the following organizations as members:—South, West and North Park Playgrounds, Cook County Bible Class Athletic Association, Cook County High School League, Y. M. C. A.'s and Inter-Settlement Leagues. A few weeks later the Oak Park, Austin and River Forest Bible Class League joined the federation, which at this time was composed of 220 units representing a combined membership of over 100,000 men and boys with about 10,000 participating athletes. It should be noted that the president of the Central A. A. U. was chairman of this meeting at which the Federation was organized, was in sympathy with everything done, and a member of the executive committee, from which he resigned later.

The Cook County A. A. F. was formed for the purpose of placing indoor baseball upon an amateur basis among its members. To meet the local indoor baseball situation three rules of special importance were adopted: First, teams in the Federation were not to play so-called semi-professional teams. Second, teams in the Federation were not to play amateur teams, not members of the Federation, that did play semi-professional teams. Third, neither A. A. U. or A. L. N. A. registration was required. The Federation was able to adopt this third rule without antagonizing the A. A. U. for the reason that the A. A. U. did not have jurisdiction over indoor baseball. Every athlete, however, had to be in good standing in his own organization and eligible to compete. The Federation took the same position in the Spring of 1909 with reference to outdoor baseball. The Federation was successful in placing both indoor and outdoor baseball on an amateur basis.

Having been successful with indoor and outdoor baseball, and having competed with each other in these sports regardless of either A. A. U. or A. L. N. A. registration, the members of the Federation naturally raised the question—why should they not compete with each other in all forms of sports, as well as in indoor and outdoor baseball on this free basis, i. e., without A. A. U. or A. L. N. A. registration. It was recognized, however, that this could not be done for the reason that four organizations in the Federation were not members of either the A. A. U. or the A. L. N. A. and did not register their athletes in either of these two additional bodies, which would have been necessary if the members of the Federation desired to compete with each other in sports other than baseball.

The organizations in the Federation that were also members of the A. A. U. decided to wait until their memberships in the A. A. U. had expired before competing with each other in all lines of sport. Therefore, on September 27, 1909, the beginning of the new year for the A. A. U., the South Park Playgrounds, Cook County Bible Class League, Evanston, West Side and Central Y. M. C. A.'s sent regrets, instead of their renewals for memberships, to the Central A. A. U.

The six Y. M. C. A.'s in Cook County, however, were still members of the A. L. N. A. and as such were obligated by reason of the alliance between the National A. A.U. and the National A. L. N. A., to compete only with organizations members of, or registered with the A. A. U. These associations, however, decided not to compete in open games, until their memberships in the A. L. N. A. had expired which was November 1, 1909. On this date the six Y. M. C. A.'s in Cook County sent regrets, instead of their renewal for memberships, to the National A. L. N. A.

This sketch clearly shows that the members of the Cook County Amateur Athletic Federation dealt honorably with both the A. A. U. and the A. L. N. A.—that not a single amateur rule was broken by the A. A. F. nor did the members of the Federation, while members of either the A. A. U. or the A. L. N. A. violate a single obligation imposed upon them by this membership. The A. A. F. has taken the position that any athlete, registered with and in good standing in any one of the recognized leagues in the A. A. F. and eligible to compete, should not be required to register with the A. A. U. or any other body in addition to the registration in his own league.

On Thursday, December 2, 1909, the International Gymnastic Union, a Local Turners Organization composed of 18 societies (German and Bohemian) and representing a membership of about 4,000, joined the Federation. Reporting on the work accomplished during the two years of the Federation's existance our correspondent says: The present membership consists of the High School League, Turners, Y. M. C. As., Playgrounds, Church Leagues and Social Settlement League, in all 260 units representing a total membership of men and boys of over 100,000 with about 11,000 participating athletes.

The Cook County A. A. F. has unified the methods, rules, regulations and standards of its members so far as conditions in each organization made it possible and consistent with efficiency, has abolished Marathon racing for physiological reasons and has made it impossible for an athlete to represent more than one organization during the year. During the past season the A. A. F. conducted championships in basketball, track and field athletics, indoor baseball, wrestling and gymnastics. Furthermore, the various organizations in the A. A. F. conducted their own leagues in either football, basketball, indoor baseball, swimming, track and field athletics, bowling, tennis. gymnastics and outdoor baseball, all on a strictly amateur basis.

The thorough organization of the A. A. F. and its effective administration is attracting the attention of athletic authorities throughout the country. Several federations, patterned after the Cook County A. A. F. have already been organized in different sections of the country and others will be perfected this fall. These federations are composed of Colleges, High Schools, Y. M. C. As., Turners, Playgrounds, Settlements, etc., and do not in any way interfere with the A. A. U. in its work among athletic clubs.

During the second year of the Federation nearly every organization in the A. A. F. worked out some kind of a scheme of classification for competition in gymnastics, athletics and aquatics which will tend to make the work more scientific and increase the number of competitors, especially among those who need it most.

Many lovers of clean sport have looked with considerable dissatisfaction upon the system of "frenzied athletics" which have so long dominated the athletic world and have wished for something better. It seems now as if the time were near at hand when the bulk of the competitive work in Chicago is to be placed upon a sane and physiological basis through the combined efforts of the organizations in the A. A. F.

The result of this determined stand for sane competition was evidenced at the annual meeting of the Federation, held Friday, October 8th, when the following declaration of principles was made:

"Recognizing the social and educational value of competition in physical activities, the Cook County Amateur Athletic Federation stands first and always for wholesome formal and informal contests in gymnastics, athletics and aquatics for the many. The Federation desires to serve those who stand for "sport for sport's sake," who desire to acquire those manly virtues cultivated by sane competition and who furthermore will be loyal to the ideals of the organizations they represent. For the men who are looking merely for notoriety, for medals and cups, or are ever ready to shift their allegiance whenever offered suitable (to them) material inducement to do so, the Federation has nothing to offer except to encourage such to come in and co-operate on this other higher basis."

Universities and Colleges, Playgrounds and Y. M. C. As. throughout the country are swinging away from the type of athletic work which caters to and develops only the few experts. The demand everywhere is for a scheme of physical training that shall contribute to the physical and social life of the many and the most needy. The policy of the Cook County A. A. F. is therefore in line with this general trend. The Turners have had perfected for many years a system of grading, and the South, West and North Side Playgrounds have been working for some time on a scheme of grading for all forms of athletics and aquatics. The Municipal Playgrounds in the city have been doing the same thing during this past summer and the Y. M. C. As. will begin to complete their classifications for gymnastics, athletics and aquatics in the near future.

This policy of the organizations in the Federation will not only multiply many times the number of competitors, but the character of the work will be more scientific than heretofore. The experts as well as "the men lower down" will be given a chance in due season to meet men of their own calibre. The meets in the various organizations in the Federation promise to be more satisfactory than ever this winter.

There will be plenty of competition not only within and between the groups in the Federation, but also with educational institutions and other organizations conducting amateur sport not in the Federation or in Cook County. In addition the organizations in the Federation will hold their own championships. A. A. F. championships will be held in several lines of sport.

A report was then read showing that the Federation now numbers 263 units, (societies, clubs, schools, playgrounds, etc.,) representing at least 11,000 active participants.

The election of officers was next in order. Dr. Kallenberg stated that he felt sufficiently honored to have been president since the origin of the Federation and recommended that the office of president be conferred upon the various members in rotation. The election resulted as follows:—

President—Lewis Owen.
1st Vice-President—C. A. Cobelli, International Gymnastic Union.
2nd Vice-President—W. R. Millan, Bible Class Athletic Association.
3rd Vice-President—G. W. Martin, Cook Co. Y. M. C. A. League.
Secretary—Henry F. Kallenberg, M. D.
Treasurer—C. A. Sartain, North Park Playgrounds.

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Probably the most ambitious attempt yet undertaken to legislate pure air into buildings is that provided for, in the proposed building code now under consideration in Chicago. Not only school and other public buildings are covered in the ordinance, but the requirements are considered, of department stores, office buildings, hospitals, hotels, residences, theatres and even stables. Most of the ventilation legislation now on the statute books is confined exclusively to school buildings.

The code also takes into account the varying requirements in different classes of buildings and specifies a definite fresh air supply in each case in amounts averaging fairly close to the usual quantity of 1,500 to 1,800 cu. ft. per hour per person. In addition, the quality of the air in assembly rooms and similar apartments must come up to a standard of 10 parts of

CO^2 in 10,000 parts of air, when taken at a point 2½ to 8 ft. above the floor and generally distributed. Moreover, the temperature in such spaces must not exceed 68° F. when artificially heated, and the relative humidity must be kept within 45 per cent and 80 per cent.

While no difficulty is presented in meeting the conditions of the code, the movement is easily the most important and far-reaching of its kind yet undertaken. If the ordinance is adopted, the idea will no doubt be taken up in other large centers and thus it should mark the beginning of a record-breaking growth in the business of heating and ventilation.

THE BELGIAN NATIONAL GYMNASTIC FETE 1910.

Condensed Report from Middlesex County Times.

As British delegate, it was my privilege to attend the thirty-second annual gymnastic festival of the Belgians at Brussels, a short account of which may, perhaps, prove not uninteresting. Advantage of the fact that the Exposition was in full swing was taken to hold the function in the Exhibition grounds.

The meeting of the Bureau of the European Gymnastic Federation at the Town Hall was a very interesting affair—many items discussed were of great interest, and one renewed many pleasant friendships.

As usual in Belgium ,the first important official function was the torchlight procession. This was carried out in spite of a miserable soft, soaking wet sort of rain that penetrated everything with much ease. The several bands cheered up matters, but not a complaint was heard; all took it as a matter of ordinary duty and discipline. The City Fathers received the foreign delegates and fete officials at the charming Hotel de Ville, with the usual courtly old-world ceremonial.

The next day, blue and bright, at 7 a. m., hundreds of gymnasts were at work on the fete ground competing in gymnastics, drill, jumping, etc., all in numbered squares, making things very easy for judges and competitors.

At 11 a. m., repetition of the grand march through all the principal streets—this time under a beautiful sky and a warm sun—foreign gymnasts being especially cheered by spectators. The official programme records that sixty-six societies, or clubs, from Italy, France, Bohemia, Luxembourg, Roumania, Monaco, Germany, Switzerland, Holland and England took part. France and Holland naturally sending the largest contingents of gymnasts of foreign countries represented. Belgian clubs numbered 122, which, adding about twelve bands, brings the figures to 212!

The official programme contained an enormous amount of information. Two songs, especially written for the fete, were given a prominent place, photographs of leading personages, as well as two excellent maps of the City of Brussels.

M. and Madame Eugene Mignot entertained at lunch the officials and special guests at the Restaurant de la Monniae. It was here that I met again many old friends.

After this function we adjourned to the fete ground in order to witness the march in, general competitions, and grand mass drill. Taken altogether, the organization did not appear to be quite so good as usual.

It is always an inspiring sight to see hundreds of gymnasts in various coloured costumes at work upon the "fest platz." All units, nevertheless, are working organisms embued with one object, viz., the cultivating of the National physique by disciplinarian exercises. The ladies from Holland had one of the most effective costumes, and appeared to enjoy their hearty reception.

The ceremony of the federal flag was performed with the usual formalities. To see 150 flag-bearers in two lines approach the tribune, escorting the federal flag is always a very pretty ceremony.

The great mass drill, in which about 3,000 took part, though a fine sight, was not executed with that precision one usually sees at these festivals. The ground, perhaps, was in places not "knobbley." In the march past afterwards, to a lively quick-step—always to my mind one of the most interesting of all items in the fete—is certainly where the national characteristics and training show conspicuously. The French and the Belgians adopt a short, brisk step, the Dutchmen longer, while the German gymnasts strode by with the stiffened knee, for what purpose other than to diffuse energy unnecessarily, it is hard to conceive.

In the evening, the large Congress Hall was fairly well filled to witness a gymnastic display of specialities.

The next day more competitions, and then at night "Le Banquet Officiel" at the Elite Restaurant. This was a long affair, starting at 8:30, and concluding about 1 a. m. So many speeches were made that some excuse may be advanced for the time taken. It is very interesting to observe the racial differences in speeches made by Dutch, Italian, Polish, German, French, and other delegates. The French and Italian languages seem to lend themselves to oratorical effects better than most others.

One wonders when our country will fall into line and regard gymnastics as our foreign friends do. The enormous value to the country of thousands of young men submitting themselves to the rigorous discipline and the sacrifice in general entailed by what one may call National gymnastics, cannot be estimated. Notwithstanding science and sanitation, the general health of the nation is not as good as it was. No nation can attain or retain a first-class position if depending only on individual excellence; it needs to-day to be collective. Games diffuse energy—gymnastics conserve it. Germany to-day owes her position as much to the patriot Jahn, if not more, than to Bismarck, on the principle that Huss of Bohemia made Luther possible.

With our Territorial system an admitted failure, it is time—while there is time—to take national stock to see where we are. For a nation geographically on a par with ourselves to depend upon Boy Scouts, Territorials, (ill-trained, though ardent), and the selfish unpatriotism of the average man who declines to do anything for his country except in it, appears not in a very healthy condition to hold its own in the great testing-time fast approaching. Compulsory gymnastics and a commonsense universal service system, for men from twenty to forty, would, of course, work a revolution in a few years, if it is not too late in the day.

It is said that those whom the gods desire to destroy they first make mad. In our land to-day it is play, play, play. To-morrow it may be pay, pay, pay!—*Eugene Sully in Physical Education, London.*

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NOTES AND COMMENTS.

MR. ROBERT NIX, speaker of the National Executive Committee of the Turnerbund, the dean of the department of Letters and Sciences of the Normal College of the North American Gymnastic Union died at Indianapolis on Sunday, October 16th. From the time when, in the year 1898, the National Central Committee of the Turnerbund was transferred to Indianapolis, Mr. Nix was an indefatigable worker in the Normal school committee of the Bund. Being a school man of the highest culture with a strong belief in the high mission of teachers, he was an untiring advocate of all measures that stood for increased efficiency of the normal school. To have had Robert Nix as an advisor or as a teacher was a privilege. The normal college as it now stands is a monument to his industry, his efficiency and his lofty ideals. The wise council of this modest man, with his tremendous knowledge and unflagging energy, will long be missed in Turner circles.

—IT IS SO SELDOM that school superintendents lay the law down to their associates and to school principals that the following words by Dr. Maxwell of New York City have received more than local notice:—

"Though, as you know, I place a high value on drawing, manual training, singing, sewing, and cooking, yet the most important work you have to do is physical training and the teaching of reading, composition (oral and written), arithmetic, geography, and history.

"See that the physical training exercises are never neglected; that games are in constant use; that folk dancing is taught to girls, and as well to boys if the opportunity presents, and, above all, that the setting-up drill is used between every two periods."

—CINCINNATI, like many other cities, has efficiency tests for the pupils of her schools, those passing the tests being rewarded with a button. It has been the common experience in most cities that boys who, physically, were able to make some of the teams, especially in the high schools, looked rather condescendingly upon these tests for all around efficiency. The following table showing the mental standing of the members of certain teams in one of Cincinnati's high schools is, therefore, interesting from several new points:

Team.	Total pupils.	Passed.	Failed.	Left school.
Football	9	4	3	2
Baseball	12	8	4	0
Fieldday	14	10	4	0
Efficiencytest	27	22	4	1

According to this report the brightest pupils mentally were the twenty-seven boys who passed the button test, as twenty-two of them passed in their mental tests, while of the 9 football players only four passed to a higher grade.

—THE WINTER MONTHS are before us. With these come air conditions that in many schools, assembly halls, gymnasiums, etc., are positively injurious to the pupils assembled there. The following circular, issued by the school authorities of Chicago will, therefore, be of more than passing interest. In fact, we hope that it will lead many of our readers to work for the issuing of a similar circular in their cities.

"The following plan, drawn up by the Chief Engineer, has been accepted by the Committee on Buildings and Grounds, and will be put into operation September 1, 1910:

"The principals, with the co-operation of the teachers, will arrange for flushing the rooms with fresh air by the opening of windows and classroom doors throughout the building at practically the same moment, in order that advantage may be taken of the prevailing wind. The temperature of the rooms should not be allowed to fall below 55 deg. Fah., and the responsibility for the habitable condition of the class rooms will be placed upon the respective teachers. In extreme cold weather the windows should be opened but slightly and careful attention given to prompt closing of same. Except where special permission is given by the Chief Engineer, windows are to be opened during these periods only: *recess in morning session, close of morning session, recess in afternoon session.*

"Whenever the atmospheric conditions are such that the mechanical system of ventilation is closed down, the principal will be notified promptly by the engineer, and a similar notice given at the resumption of same. It is suggested that the principals and engineers of buildings agree on a series of signals which may be given on the school gongs; such a system is now in operation in a number of buildings.

"One ribbon ¼ in. x 14 in. will be placed over each heat inlet where practicable, and teachers are urged to communicate at once with the principal should this ribbon indicate a closing down of the mechanical system at a time when it should be in operation.

"When the mechanical system of ventilation is closed down, the rooms should be flushed with fresh air more frequently than when the ventilating fan is in operation and two or more windows should be kept open several inches at the top, due attention being given to preventing a draft in the room."

NOTES FROM NORMAL SCHOOLS.

NORMAL COLLEGE OF THE N. A. G. U., INDIANAPOLIS, IND.

The Normal College of the North American Gymnastic Union opened its College year September 19, 1910, with the following enrollment of students. The 2d year's class numbers ten: Louis K. Appel, Fred E. Foertsch, Arthur Froehlich, Corinne A. Guenther, Alvin C. Herrmann, Rudolph Hofmeister, Priscilla A. Ketcham, Roland F. Neumann, William

Nicolai and Albert F. Plag; the 1st year's class 16: Elizabeth Davidson, Florence E. Dodge, Nellie B. Havens, Henry J. Haeberle, A. Tutie Kenzler, Olive F. Knorr, Alma H. Krueger, Harriet E. Mead, Geo. F. Miller, Gilcher E. Neeb, Irene K. Schoen, Clara E. Scott, Elma Reeder, Louise Schneider, Rudenz Seiffert and Anna Trumble; and the Elementary class four: Otto G. Modler, Hans Reuter, Charles Stoesser and Hugo Thomas.

The classes have organized in the following order:

Senior class—President, Rudolf Hofmeister; Vice-President, Otto G. Modler; Secretary, Corinne A. Guenther; Treasurer, Fred E. Foertsch.

Junior class—President, George F. Miller; Vice-President, Clara Scott; Secretary and Treasurer, Rudenz Seiffeffrt.

The Students' Alliance has again organized with the following officers: President, Rudolf Hofmeister; Vice-President, Albert F. Plag; Secretary, Corinne A. Guenther; Treasurer, Louis Karl Appel. The purpose of this organization is to provide for social functions and literary entertainments.

Owing to the fine weather the class has done a great deal of outdoor work at the Turner Park. The records of all the students have been taken in all Field and Track events. The best records are as follows:—

Running High Jump—5 feet 7 inches.
Running Broad Jump—20 feet.
Pole Vault—10 feet 4 inches.
Shot, 16 pounds—36 feet.
Discus—115 feet.
Hurl Ball—120 feet.

No dashes and hurdles have been attempted, but starts and taking hurdles have been diligently practised.

The first social function took place on Saturday, Oct. 8. It consisted of an informal reception and dance, and was well attended, and everybody seemed to enjoy a pleasant evening. The first conference meeting will occur on Saturday, Oct. 29. A good program has been arranged.

Last year's graduates have been placed in the following positions:—
Clarence Betzner, Public Schools, Cincinnati.
Edwin Hoppe, German-English Teacher's Academy, Milwaukee.
Delia Gipe, High School, Saginaw.
Hazel Orr, Woodward High School, Cincinnati.
Adolf Picker, Vorwaerts Turnverein, Baltimore.
Louis Zabel, Sued St. Louis Turnverein.
Otto Schissel, Highland Turnverein and Public Schools, Highland, Ill.
Martin Trieb, Turnverein, Holstein, Iowa.
George Baer, Turnverein Meriden, Conn.
Harry Eickhoff, Detroit, Mich.

The death of Miss Avis C. Lutz ('10) was a severe shock to all her classmates and friends. She had taught but one week in Cincinnati when she was taken ill with pneumonia and died Friday, Oct. 14, 1910. The class of '10 has undoubtedly lost one of its hardest and most energetic workers.

THE NEW DARTMOUTH GYMNASIUM.

The new gymnasium will be located at the north end of the athletic field. The entrance to the building will be at the north, nearly opposite the Alpha Delta Phi House. The gymnasium will be absolutely unique, in that it will contain under one structure, complete facilities both for regular gymnastic and physical exercises, and for preliminary training and development in all branches of college athletics.

The building will consist of a ground floor, first floor and second story. The main building will be 200 feet long and 80 feet wide, and will lie north and south.

The first floor contains upon entering, a large trophy hall, 65 feet deep by 80 feet wide and 12 feet high, with heavy beamed ceilings and with fireplaces on each side. That this trophy hall will contain practically the same number of square feet as the present gymnasium, will furnish some idea of the magnitude of the new building. To the south of the trophy hall lies the locker room, which will be fitted with modern steel lockers with perfect shower bath and toilet facilities and drying rooms. Special separate apartments are provided for visiting teams, with private lockers, showers and toilets. Similar accomodations are provided for home teams.

The second floor will be approached by double staircases toward the north end, and will have smaller staircases in the south end, leading down to the locker room and shower baths. This floor will be the gymnasium floor proper and will consist of a room 80 feet wide by 200 feet long. Here a gymnasium class of several hundred men may be exercising while at the same time there is still ample room left for two indoor tennis courts.

The ground floor is 110 feet wide north and south, and 360 feet long east and west and is divided into three parts. The central part is 8 feet high and is under the first floor. This space will be given up to necessary storerooms for all kinds of gymnastic and athletic apparatus, and may eventually be used for a swimming tank. It does not seem wise to undertake to raise funds for such a tank at this time. The eastern and western parts of the ground floor are 40 feet high and are really wings to the main building. In the west wing there will be a regulation size base-ball diamond on dirt. There will be ample room left for field events, running broad jump take off, with dirt pit and a dirt run, a section devoted to shot-putting, another to pole vaulting, running high jump, etc. The floor of this entire wing will be of dirt. The east wing will afford sufficient space for six hand-ball courts, each 40 feet by 20 feet, two squash tennis courts, 40 feet by 25 feet. Within these wings and running under the first floor of the main building and thus surrounding the entire groud floor will be a dirt running track 10 feet wide and 8 laps to the mile. This track will allow two stretches of 120 yards, each straightaway, for the use of sprinters and hurdlers. Directly over this track in each wing will be a gallery at the same level as the floor in the gymnasium hall, i. e., the second floor of the main building. By the use of sliding doors opening at four points into the gymnasium hall, this gallery may be used as an 8-lap board track.

The entire building is designed so as to give the very largest and best light and ventilation, and under the one roof can be accommodated practice in baseball, basketball, tennis, hand ball, squash tennis, track and field athletics and gymnastics, in which the entire student body can take part at the same time.

DUMB BELL DRILL.*

By **Leila Z. Williams**, Physical Director N. J. State Institution for Women.

Formation in Ranks of 3. 1 2 3

1) a. Raise arms forward, place left foot forward	1
b. Carry arms sideward, place left foot sideward left	2
c. As exercise 1 a	3
d. Position	4
Same right	5—6
Repeat left and right	9—11
2) a. Raise arms foreupward, place left foot forward	2
b. Lower arms sideward, place left foot sideward	3
c. As exercise a in 2	4
d. Position	8
Same right	5—8
Repeat left and right	9—16
3) a. Raise arms sideward, place left foot sideward	1
b. Raise arms upward, place left foot backward	2
c. As exercise a in 3	3
d. Position	4
Same right	5—8
Repeat left and right	9—16
4) a. Raise arms sideward, place left foot forward	1
b. Lower head backward	2
c. Raise head	3
d. Position	4
Same right	5—8
Repeat left and right	9—16

GROUP 2.

1) a. Fall out left sideward, raise left arm obliquely sideward upward, right arm obliquely sideward downward	1—4
b. Same right	5—8
c. Repeat left and right	9—16
2) a. Raise arms sideward, place left foot backward	1
b. Raise arms upward, kneel on left knee	2
c. As a. in 2	3
d. Position	4
Same right	5—8
Repeat left and right	9—16
3) a File No. 1. as a. in 1 Group 2	
File No. 2. as a. b. c. d. in 2 Group 2	
File No. 3. as b. in 1 Group 2	1—4

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* This drill was successfully rendered by the middle grade feeble-minded women of the New Jersey State Institution for feeble-minded women of the New Jersey State Institution for Feeble-minded Women, Vineland, N. J.

	b. No. 1. same to right	
	No. 3. same to left	
	No. 2. same kneeling on right knee	5—8
	c. As exercise a. in 3	9—12
	d. As exercise b. in 3	13—16
4)	Files 1 and 3 as 2 in Group 2	
	File 2 fall out left forward, raise arms sideward	1—4
	No. 1 and No. 3 same No. 2 fall out right forward	5—8
	No. 1 and No. 3 same No. 2 repeat left and right	9—16

GROUP 3.

1)	a. Raise arms sideward left, place left foot sideward left	1
	b. Swing right bell overhead to sideward right, place left foot sideward right	2
	c. As exercise a	3
	d. Position	4
	Same right	5—8
	Repeat left and right	9—16
2)	a. Raise arms sideward, place left foot sideward	1
	b. Bend left arm bell on shoulder, bend knees left foot cross-step sideward right	2
	c. As exercise a in 2	3
	d. Position	4
	Same right	5—8
	Repeat left and right	9—16
3)	a. As exercise a in 2	1
	b. Bend left arm bell over head, bend trunk sideward right foot place as exercise b in 2	2
	c. As exercise a in 2	3
	d. Position	4
	Same right	5—8
	Repeat left and right	9—16
4)	a. Click bells forward, place left foot forward	1
	b. Click bells backward, place left foot backward	2
	c. Raise arms sideward, place left foot sideward	3
	d. Place bells on hips	4
	Same right	5—8
	Repeat left and right	9—16

When repeating last exercise bend head forward in courtsy.

FIELD DAY OF THE ST. LOUIS PUBLIC SCHOOLS.

Saturday, May 21st, 1910.

Wand Exercises for Pupils of Grades V and VIII.

Music:—March, 4-4 Time.

An introduction of 8 beats will precede the exercises and an interlude of 16 beats will be played between the parts, during which the pupils remain in the starting position.

PART ONE.

FIRST EXERCISE.

(a)	Raise wand horizontally forward and march forward three steps, close heels at four	1-4
(b)	Lower wand horizontally in rear of shoulders, mark time and face left	5-8
(c)	Raise wand horizontally upward and two follow steps left sideward	9-12
(d)	Lower wand forward, mark time and face left	13-16
(e)-(h)	Repeat (a) and (d)	17-32

SECOND EXERCISE.

(a)	Raise wand horizontally in front of shoulders, arms bent, elbows raised and stride left forward	1-4
(b)	Raise wand horizontally upward and bend left knee	5-8
(c) and (d)	Return movements	9-16
(e)-(h)	Repeat (a)-(d) with leg movement right	17-32

THIRD EXERCISE.

(a)	Raise wand vertical, left hand on hip, right over head and stride left sideward	1-4
(b)	Carry wand over head, placing right hand on right hip and bending left knee	5-8
(c) and (d)	Return movements	9-16
(e)-(h)	Repeat (a)-(d) starting right	17-32

FOURTH EXERCISE.

(a)	Place wand horizontally in rear of shoulders and stride left backward	1-4
(b)	Wand diagonally, left arm forward, right upward and bend left knee	5-8
(c) and (d)	Return movements	9-16
(e) and (h)	Repeat (a)-(d) opposite	17-32

4×32=128 Beats.

PART TWO.

FIRST EXERCISE.

(a)-(h)	Repeat First Exercise of Part One facing and walking to the right	1-32

SECOND EXERCISE.

(a)	Raise wand horizontally forward shoulder high and stride left forward	1-4
(b)	Bend arms, elbows shoulder high and lower trunk forward	5-8
(c) and (d)	Return movements	9-16
(e) and (h)	Repeat (a)-(d) with leg movement right	17-32

THIRD EXERCISE.

(a)	Raise wand vertical, left hand on hip, right over head and stride left sideward	1-4
(b)	Carry wand over head placing right hand on right hip and bend trunk right sideward	5-8
(c)-(d)	Return movements	9-16
(e)-(h)	Repeat (a)-(d) opposite	17-32

FOURTH EXERCISE.

(a) Raise wand horizontally forward up and stride left backward. 1-4
(b) Place wand horizontally in rear of shoulders and bend trunk backward 5-8
(c)-(d) Return movements 9-16
(e)-(h) Repeat (a)-(d) with leg movement right............. 17-32

4×32=128 Beats.

PART THREE.

FIRST EXERCISE.

(During the interlude of 16 counts the wand is placed horizontally in rear of shoulder at 9.)

(a) Raise left leg forward, bend in front of right while hopping twice on right foot.................................. 1-2
Straighten left leg forward and two-step left forward......... 3-4
(b) as (a), right and face left about with the two-step.......... 5-8
(c) and (d) Repeat (a)-(b).................................. 9-16
(e)-(h) Repeat (a)-(d) starting right and facing right about... 17-32
With the last two-step at 15-16 lower wand to position forward.

SECOND EXERCISE.

(a) Raise wand horizontally forward up and lunge left forward.. 1-4
(b) Place wand in rear of shoulders, turn and lower trunk right forward 5-8
(c) and (d) Return movements.................................. 9-16
(e)-(h) Repeat (a)-(d) opposite 17-32

THIRD EXERCISE.

(a) Raise wand vertically, left hand on left hip, right over head and lunge left sideward.................................. 1-4
(b) Carry wand over head placing right hand on right hip and turning trunk right.................................. 5-8
(c)-(d) Return movements.................................. 9-16
(e)-(h) Repeat (a)-(d) opposite 17-32

FOURTH EXERCISE.

(a) Raise wand horizontally shoulder high, arms bent, elbows raised and lunge left backward.................................. 1-4
(b) Straighten arms upward, turn trunk left 1/8 turn and bend backward 5-8
(c)-(d) Return movements 9-16
(e)-(h) Repeat (a)-(d) opposite 17-32

4×32=128 Beats.

EFFICIENCY TESTS AS CONDUCTED IN THE HIGH SCHOOLS OF CINCINNATI, O.

The so-called "Button Test" for all around efficiency consists of the following events:—running, high jumping, medicine ball throwing, rope climbing, (hand over hand), and one exercise on one of the following pieces of apparatus: horizontal bar, parallel bars, side or long horse. The participants, according to their performances, receive up to 10 points for each event. Pupils scoring forty points are entitled to a button with the proviso that failure to make seven points in any one event will disqualify the contestant.

Pupils in the lower grades are classed as Juniors, and in the upper grades as Seniors. The tests in the track and field events for each division are as follows:—

JUNIORS	SENIORS
100 YARD DASH	**220 YARD DASH**
11 1-5 seconds=10 points.	23 seconds=10 points.
11 2-5 seconds= 9 points.	24 seconds= 9 points.
11 3-5 seconds= 8 points.	25 seconds= 8 points.
11 4-5 seconds= 7 points.	26 seconds= 7 points.
HIGH JUMP	
4 ft. 6 in.=10 points.	4 ft. 9 in.=10 points.
4 ft. 5 in.= 9 points.	4 ft. 8 in= 9 points.
4 ft. 4 in.= 8 points.	4 ft. 7 in.= 8 points.
4 ft. 3 in.= 7 points.	4 ft. 6 in.= 7 points.
MEDICINE BALL THROW	
33 ft.=10 points.	38 ft.=10 points.
32 ft.= 9 points.	37 ft.= 9 points.
31 ft.= 8 points.	36 ft.= 8 points.
30 ft.= 7 points.	35 ft.= 7 points.
ROPE CLIMBING (HAND OVER HAND)	
15 ft.=10 points.	15 ft. in 9 sec.=10 points.
14 ft.= 9 points.	15 ft. in 10 sec.= 9 points.
13 ft.= 8 points.	15 ft. in 11 sec.= 8 points.
12 ft.= 7 points.	15 ft. in 12 sec.= 7 points.

For showing their efficiency on apparatus twenty-four combinations on the horizontal bar, parallel bars, and the side and long horse, were selected. From these exercises one is selected each year for one piece of apparatus. As no one knows which exercise will be chosen the boys must learn all and be able to perform them with such ease and precision as to get at least seven points for the selected exercise. The four track and field events, combined with four exercises on apparatus, are certainly an admirable test for physical efficiency. And if after reading the following exercises any one again tells you that "American" boys don't care for apparatus work, tell them to go to Cincinnati and see the apparatus work done in the high schools, not by a star team, but by all the boys.

HIGH HORIZONTAL BARS

JUNIORS	SENIORS
1. Jump to bent-arm hang (ordinary grasp) and swing, at end of the second forw. swing, front hip circle backw. to side rest frontways; underswing to straight-arm hang and at the end of the backw. swing raise knees, underswing and down to side stand rearways.	1. Jump to straight-arm hang and swing, at the end of the backward swing, bend arms, swing forward and front hip circle backward to side rest frontways; under and intermediate swing, raise feet to bar and upstart (kip) to side rest frontways; front hip circle backward and down to side stand frontways.

2. Jump to straight-arm hang and swing, at the end of the forward swing, squat backward left between hands to kneehang and swing up forward; drop backward, squat forward left and underswing, intermediate swing and repeat the above with the right leg; drop backward, squat forward and down to side stand rearways.

3. Jump to straight-arm hang; raise both knees forward, then turn over backward, straighten knees (the feet to bar); front hip circle backward to side rest frontways; lower forward slowly and flex hips (feet to bar); turn over backward with insteps resting against bar (bird's nest); return and straighten knees. feet to bar; squat backward with both legs and lower to hang rearways (feet downward) and jump down.

2. Jump to straight-arm hang and swing; upstart (kip) to side rest frontways; underswing and pull up to side rest frontways at the end of the backward swing (i. e. back rise); front hip circle backward and down to side stand frontways.

3. Jump to straight-arm hang; slowly raise both knees upward and squat backward, then extend knees (legs upward) to side hang rearways; lower backward to back hang (feet downward); release grasp of the left (or right) hand, 4-4 turn and regrasp bar; pull up left and right alternately to side rest frontways; lower backward with both knees raised forward to straight-arm hang, lower the legs and down.

HIGH PARALLEL BARS

JUNIORS

In cross-stand frontways, hands on end.

1. Jump to straight-arm rest, circle left leg under left hand and rest on bar in front of right hand; ½ turn left to straddle seat behind hands (screw mount left); raise both legs backward, intermediate swing and back scissors; grasp bars in front of thighs; raise both legs backward, swing forward and rear vault left or right.

In cross-stand rearways, hands on end.

2. Turn over backward to leaning rest frontways; bend and straighten arms once; intermediate swing, squat rest left behind left hand and swing right leg forward; swing right leg backward, the left to join the right and front vault right.

In cross-stand frontways, inside grasp at end.

3. Jump up slightly, turn over

SENIORS

A short run precedes the exercise.

1. Leap to straight-arm rest (about 1-3 distance in the bars), intermediate swing and front scissors mount behind hands; grasp bars behind thighs, roll over backward to straddle seat behind hands; raise both legs backward, swing forward to rear vault left and ½ turn left.

In cross-stand frontways with inside grasp at end.

2. Jump up slightly, turn over backward, flex thighs over body and immediately upstart (kip) to straight-arm rest, intermediate swing and turn over forward with straight body to upper arm balance; roll over forward on left bar to outside crossseat; rear vault dismount right over both bars and ½ turn left.

A short run precedes the exercise.

3. Leap to upper arm hang (in center), swing forward and flex thighs over body, swing backward and back rise to straddle seat behind

backward, flex thighs over body and immediately upstart (kip) to straddle seat in front of the hands; grasp bars in front of thighs, roll over forward to straddle seat; again grasp bars in front of thighs; raise both legs backward, swing forward and finish with flank vault forward left (or right).

hands; grasp bars behind thighs; lower backward to upper arm rest and thighs flexed over body, continue turn over backward with straightening the hips, swing forward, flex thighs over body and upstart (kip) with left leg lowered on right bar and screw mount forward left to leaning rest frontways, both hands on further bar; squat vault over near bar to inside side stand and immediately flank vault forw. left (or right) over farther bar.

SIDE HORSE

JUNIORS

A short run precedes the exercise.

1. Thief vault forward to side rest rearways; ½ flank circle backward left to side stand frontways and immediately flank vault right (over croup.)

In side stand frontways, hands on pommels.

2. Screw mount backward left on croup; front scissors; feint with right leg and rear vault mount on neck; raise both legs backward to momentary free rest and straddle dismount forward.

3. ½ flank circle left (under right hand) to side rest rearways, and immediately ½ circle left (backward) with left leg to side riding rest; screw mount forward right on croup; feint with right leg and rear vault right (over neck.)

SENIORS

A short run precedes the exercise.

1. Straddle vault forward to side rest rearways; squat backward to side rest frontways; ½ circle left with right leg (under right hand) and immediately scissors sideward left then right; ½ circle right (backward) with right leg to side rest frontways; feint with left leg and rear vault left with ½ turn right.

In side stand frontways, hands on pommels.

2. 4-4 flank circle left to side stand frontways; ½ flank circle left to side rest rearways and immediately ½ circle left (backward) with left leg; ½ circle right (backward), with right leg to side rest frontways; feint left and flank vault right (over croup.)

3. Right hand on left pommel and 5-4 turn left, circle left with right leg to cross riding seat on croup; feint with right leg and ½ circle (backward) with right leg to side rest frontways; immediately ½ circle right with left leg (under left hand) to right angle, then circle right leg over croup to meet the left (right arm between thighs) and screw dismount backward right.

LONG HORSE

JUNIORS	SENIORS
A run precedes every exercise.	A run precedes every exercise.
1. Leap to momentary free rest frontways (hands on neck) and lower to straddle (riding) seat in the saddle; place both hands on end and raise both legs backward to a leaning rest frontways; straddle dismount forward.	1. Leap to leaning rest frontways (hands on neck); straddle dismount forward.
2. Leap to squat rest on croup (hands on croup); stand erect; leap to momentary free rest on neck and straddle dismount backward (½ turn left or right) to crossstand frontways.	2. Leap to momentary free rest frontways (hands on neck) and straddle vault forward.
3. Rear vault right (hands on croup) with ¼ turn left to side stand frontways at saddle and immediately flank vault right.	3. Front scissors mount (½ turn left or right) to leaning rest frontways (hands on croup); lower to straddle seat in saddle and immediately turn over backward to crossstand frontways.

CRITICAL OPINIONS OF THE INTERNATIONAL CONGRESS FOR SCHOOLHYGIENE IN PARIS, FRANCE.

In the following are a few but weighty criticisms which suggest that this last International Congress was of little, if any, significance.

"It was evident that this congress was not an undertaking which was considered of any importance by the municipality or even by private people, nor did it suggest earnest preparation and dignity. In Nurnberg and in London the problems of school hygiene were met with keen interest and enthusiasm as they referred to our most important public institution, the school. The deliberations were about our most precious possession, the child? The welfare of the child meant the future of the nation. Everyone realized we have much to accomplish and to improve, therefore, we will learn together and from each other. Paris did not take us very seriously. The various sections, which met only on three days, were admonished from the beginning, to complete their work between 10 and 12, so that the afternoons would be free. Thanks to the presiding officer this was made possible, although the discussions and general exchange of thought and experience were cut to a minimum. Every afternoon there were exhibitions in the large hall of the congress building. 'Seances de gymnastique comparie' was the promising title of these exhibitions. From what I have seen and heard, for I did not attend all, dancing and rhythmical exercises formed the major part of these "gymnastique comparie." Great was the applause, and huge bouquets were presented to the teachers. The president declared in the final meeting, that these exhibitions had been the "Clon" of the congress. The dances were pretty, but they did not belong there. What we received was, generally speaking, not what we expected, and what was expected of us was less than we anticipated."—C. L. S.

PRUSSIA INTRODUCES A THIRD WEEKLY GYMNASTIC HOUR AND DAILY 10 MINUTE GYMNASTICS.

The following are the new regulations governing the physical education in all the public schools of Prussia:

I. There are to be three obligatory hours for physical education for the middle and upper grades of the public schools, as there have been in the high schools, seminaries and middle schools. The additional time shall especially be devoted to athletic exercises (track and field work) games, tramps and other exercises in the open such as skating, rodelu (a form of sledding with a bob-sled) etc. Swimming is also to be taught in these hours. This measure can only then be fruitful, however, and be of service in raising our national physical standard, when it is introduced without otherwise overburdening the pupils. The number of school hours is therefore not to be increased. The hour formerly devoted to German writing is to be set aside for the above purpose. In the half day schools where formerly 1-1½ hours were prescribed for gymnastics the time is to be increased to 1½-2 hours, or better, 3-4 hours. Added to this are the exercises mentioned under II.

II. In accordance with the decree of June 7th, 1907, experiments were made in the various schools with exercises aimed to counteract the evil effects of prolonged sitting and to stimulate circulation, digestion, and also to impress carriage. The reports have been uniformly favorable. Therefore, it is hereby ordered that in all schools exercises of this kind are to be given on the days when there is no gymnastic or play hour.

GENERAL SUGGESTIONS:

1. Exercises are to be in the open; in the class room only after thorough ventilation.
2. In the class room such exercises are to be avoided which create dust. Exercises necessitating standing or lying on the desks are to be avoided.
3. It is understood that all exercises, in order to have the desired effect, are to be accompanied by proper breathing, which is to be intelligently taught during the regular gymnastic hour.
4. Exercises are not to be given immediately after breakfast.
5. The exercises are not to take place during recess, since this time is to be devoted entirely to recreation of the pupil; they are best given just before the recess. This latter has been reported as the best time.
6. The best results have been obtained where the class-room teacher exercised with the class.

III. For every grade of school it must be the ultimate aim in gymnastics to formulate the exercises so that they create a desire on the part of the pupil for voluntary pursuit of these same exercises outside of school hours, thus making them a habit throughout life. The creation of free play hours or play afternoons is, therefore, to be encouraged earnestly.—C. L. S.

PLAY AND PLAYGROUNDS.

THE MUSCULAR MAID.

It must have been easy to make a big hit
With the girls of our grandmothers' days,
When all they dared venture to do was to sit
In their straitjackets fashioned of stays
And watch their fond lovers performing great stunts
Of marvelous strength and of skill
Ah, yes, any agile and muscular dunce
Could capture the heart of a fair lady once!
I wish it were possible still!

It is trying to pose as an oaken limbed knight
Before a fair feminine vine
Whom you know in the brawniest tourneys can smite
You soundly five bouts out of nine
You follow her out on the golf links some day
And drive just your prettiest, but
She addresses her ball, and it whistles away
Till in distance, your poor little golfic display
Appears like a frivilous putt.

In yachting and driving it's ever the same,—
She does them distressingly well
You really can't mention a sport or a game
Wherin she's not apt to excel.
We men thought she'd leave us our automobile;
But it didn't occur to her thus.
So she's cutting the corners on only two wheels,
While the poor timid man who must ride with her feels
She is going the limit and plus!

Since in spheres where we once so triumphantly wrought.
We men are so badly bereft.
We shall have to play even by turning our thought
Toward the things that the women have left
So we'll learn to embroider, to knit and crochet,
Andd their triumphs we'll never begrudge,
Till sometime we'll fill their poor hearts with dismay,
And they'll worship us since we'll know better than they
Just how to make tatting and fudge.

—Nixon Waterman.

SKIPPING ROPE.

By Ethel M. Colson.

Did you ever skip or jump the rope? You, plump beauty to whom the fear of growing "stout" is as a nightmare? You, slender sister, whose waist is beginning to lose something of its shape, grace and perfection? You, medium-weight woman of 40 or over, with the dread of that "settled" look and figure rendering you periodically faint?

Cast the eyes of your memory back, all of you, to those far happy days, when you and all the other little girls of your acquaintance skipped gayly to school and back on many a bright spring morning, those joyously exciting recesses when the lot of you jumped the rope together.

Ah! You remember?

Then you see the point of this story, of course.

None of you had a thick waist or stiff knees or a heavy carriage in those days had you? And all of you, though you never gave the matter a thought, were slim and lithe and graceful. And it was a heap of fun to skip and jump the rope, wasn't it? Well, then—what's the matter with the skipping rope now?

No woman past 25, naturally, will do well to try how many times she can jump in succession, nor to essay the "pepper, salt, mustard, vinegar" diversion too rapidly or to often; adult hearts may not take kindly to sudden exercises of such ultra active order. But to jump the rope easily, lightly, gracefully, why, there's no better exercise or recreation. Try it, and see how digestion, complexion, spirits and temper all merrily improve and respond.

The individual skipping rope costs little, and the only requisite for its successful use is a shortened skirt—the long skirt of the grown woman interferes with the upward sweep of the rope. But, since all exercise is best taken out of doors, if possible, the skirt may be pinned up, supposing this the only obstacle to joyous skipping. If the skipping positively cannot be indulged outdoors, open all the windows and skip in your bedroom and bathing suit, cr some similarly curtailed and airy garment. Speaking of bathing suits, next to swimming skipping, properly undertaken, is the ideal exercise for women. It brings into play all the lines and muscles too often allowed to deteriorate for lack of use.

Most women, for instance, lean forward, bend to the front far more and oftener than they lean backward or sway to the side or the rear—which is the reason of the special good effects of swimming upon the female divine. A large majority of women have a tendency to "sink in" at the waist line just as soon as they leave off regular golf or tennis or "gym" work. A larger majority unconsciously adopt the tread of a sublimated elephant just as soon as they leave off dancing or runnig. Most of all, perhaps, learn to carry the entire torso stiffly, with an induced and altogether unnecessary awkwardness born of neglected, disused muscles after the thirthieth birthday. For all these faculty and regretable conditions the skipping rope is a delightful alternative and cure.

To reap the greatest benefit from the friendly rope, use it regularly but sparingly at first. Stand straight to beginn with, take a good, long breath of fresh air, and skip lightly, using the right and left foot alternately at first. When this has become easy and graceful—and be sure to use the toes freely, never to alight flatfooted—jump with both feet. When this feat has lost the charm of novelty, try various ways of skipping, forward, backward, round and round, all the pretty, grace and health bringing stunts that you knew and loved so well in childhood. Almost before you know it, you'll find yourself looking forward eagerly to the daily five or ten minutes of skipping rope pleasure—five minutes twice a day being better than a single ten-minute period. You'll find, too, that your color, circulation, deep breathing, nerves and digestive functions have all changed for the better, and that you are sleeping like the proverbial baby. Now is the time to go on skipping regularly, "forever 'n' ever," as the children say.

If you have a long hall, secluded veranda or other airy space in which to play, and if you like companionship, get some other woman or women to play with you. There's no better fun than concerted skipping, two at a time, unless it be the regular "jump the rope" game, for which as youngsters we "counted out" and "jumped in" duly and with stated order. The caution against too hard or sudden work of the kind must be observed, especially in the beginning, because the play is so nice and exhilarating that it presents almost irresistible temptations to excess, particularly when you see the other woman's rounded arms go up and her form assume correspondingly graceful lines and precautions. But this is all the caution that is necessary, and you might even, having needed space, give a skipping rope party to sundry joyoushearted friends and comrades.

There are few prettier sights than that afforded by a line or group of laughing, bright-eyed women, lithely skipping—to music, if you will —or jumping the rope that two of the number twirl rapidly. And as a modest, inexpensive aid to health and beauty the skipping rope deserves a first prize.

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EXTRACTS FROM MEDICAL JOURNALS AND PHYSIOLOGIC AND HYGIENIC NOTES OF INTEREST.

By D. M. FERD. KROGH, M. D., Philadelphia.

The magazine *Tuberculosis,* the monthly of the International Anti-Tuberculosis Association, published in Berlin, contains a comprehensive study of the relation of alcoholism to tuberculosis mortality, by Dr. Jacques Bertillon of Paris, the well known statistician. It is well illustrated with charts and tables.

Some of Dr. Bertillon's conclusions are: 1, Alcohol is the most prominent predisposing cause in the spread of tuberculosis in France; 2, in order successfully to combat tuberculosis the attack must be centered on the lessening of alcoholism; 3, from the figures compiled, which show the death rate from tuberculosis in the North nearly double that in the South (230 as against 140 per 100,000), Dr. Bertillon concludes that increased use of wine in the northern departments would materially lessen the mortality from consumption. He bases this conclusion on the fact that the inhabitants of northern France drink spirits in large quantities as opposed to the light wines so freely used in central and southern France. He says: "If the people of the twenty-eight northern departments drank light wines or beer, they would lose the desire for distilled liquors and the phthisis death rate would fall to 140 per 100,000 as it has in central France. This would mean a saving of 16,500 deaths from tuberculosis a year."

THE BATH TIME

In connection with the question of the hour at which a bath should be taken, the following simple rules may be useful. Take cold baths on rising in the morning, and warm ones just before retiring. In taking Turkish or Russian baths, the hour need not be considered, except as in all baths, none of which should be taken less than an hour or so before or after meals. Where it is possible, use fresh, clean rain water for the bath. This is the nearest approach to distilled water, which is too expensive for general use. Soft water is next best to rain water, and a little borax or ammonia in hard water will soften it. Brisk rubbing should always follow a bath; then the bath will do all that is claimed for it in the way of renovating the person, invigorating the system, increasing the fineness and softness of the skin, and making one look and feel younger. Cleanliness of the skin has a great effect on the general health, and it is well known that if one has been exposed to infection the best thing to do by way of precaution is to take a hot bath immediately. It is a mistake to remain too long in a tepid bath. Thirty minutes should be the limit. Throughout the winter and early spring it is best, if one is at all liable to chills, to take one's bath at night, just before going to bed. If taken in the daytime, brisk exercise immediately afterwards—either walking or dumb-bell practice—is highly beneficial.—"*Health,*" London.

From San Francisco comes news which is both startling and appalling. Diseased and tuberculous meals are to be admitted to the markets of that city, the local health board having rescinded the rules by which unfit food of the kind has formerly been excluded. This means that the diseased meat will go to markets patronized by the poor, and will be sold for less than healthy meat.

The statement that such an action has been taken by the health board because the restrictions against diseased meats were harmful to business interests is shocking enough; but well may respectable, intelligent citizens of the Golden Gate stand agast, when their health officer makes a statement like the following, which is credited to him by the San Francisco *Call*:

"I believe that this matter of tuberculosis is a survival of the fittest, anyway. Proper living and cleanliness for each person make him strong to resist the disease, but I think further measures are practically useless, on account of the great prevalence of the disease. Vaughan, of Ann Arbor, has prepared very classic statistics, in which he found, by performing an autopsy on all bodies brought to the morgues of several large cities, that at least 75 per cent. of all the people showed signs of having or of having had at some time tuberculosis."

The Philadelphia *North American* comments upon this piece of news in a manner which is so much to the point that we reprint a portion of what it says:

"It is difficult indeed to realize that in the twentieth century there still live physicians whose honest thoughts are identical with those of the French aristocrats of the old regime, before Madame Guillotine upreared her two arms for her bloody preaching.

"They were not consciously cruel, the laced and wigged and powdered people who felt no concern for the peasantry, whether they starved in the fields or were crushed under the nobles' carriage wheels. They believed in the survival of the fittest. They owned all property, human and inanimate. Their rights were vested, and, therefore, the only ones existent to be respected.

"It requires a sense of historic proportion to be fair to those men and women whose careless tyranny caused that bloody wave. But their beliefs do not to-day seem more barbarously obsolete than those we hear quoted of the officer of an American community in charge of the lives of hundreds of thousands of human beings.

"Spread tuberculosis where, when and how you please. The germs are all around, anyhow. If you are poor and unenlightened, you will be apt to become consumptive and accept the infliction of a curable disease as a death sentence. You are better out of the way in any instance. Men who raise cattle and men who sell meat are propertied men. They are the ones to be protected in their profits. You are ignorant. You are poor. Your powers of resistance of infection are reduced by your inheritance of lowered vitality from the constant, confined toil of generations of your city-bred, factory-trained ancestors. You are not of the fittest. What right, then, have you to ask for safeguards against germ poisoning that might permit you to survive?"

If this be not a fair summary of that official opening of the markets of a great city to tuberculous meat, we confess our inability to paraphrase plain English words.—*The Fresh Air Magazine,* Philadelphia.

The wise physician well understands the therapeutic value of fun and a cheerful spirit. Medicine may be a necessary and powerful agent in the treatment of illness, but it may fail where fear or melancholy joins hands with the disease. Cheer up! Smile! Let a few thrills of humor run ever so weakly through the veins and tickle the risibles. The hostile forces of disease and worry can be driven back by the benevolent microbes of mirth. *—Eugene Thwing, in the "Circle."*

It isn't the walking merely, it is keeping yourself in tune for a walk, in the spiritual and bodily condition in which you can find entertainment and exhilaration in so simple and natural a pastime. You are eligible to any good fortune when you are in a condition to enjoy a walk. When the air and the water taste good to you, how much else will taste sweet! When the exercise of your limbs affords pleasure, and the play of your senses upon the various objects and shows of nature, quickens and stimulates your spirit, your relation to the world and to yourself is what it should be—simple and direct and wholesome.—*John Burroughs.*

COMPARATIVE MUSCULAR POWER—A man of thirty weighing on an average a hundred and thirty pounds, can drag, according to Regnier, only a hundred and twenty pounds. The proportion of the weight drawn, to the weight of his body is no more than as twelve to thirteen. A draught horse can exert, only for a few seconds, an effort equal to about two-thirds of his own weight. The man, therefore, is stronger than the horse. But, according to Plateau, the smaller insect drags without difficulty five, six, ten, and twenty times its own weight. The cockchafer draws fourteen times its own weight and more. Other coleoptera are able to put themselves into equilibrium with a force of traction reaching as high as forty-two times their own weight. Insects, therefore, when compared with the vertebrata which we employ as beasts of draught, have enormous muscular power. If a horse had the same relative strength as a donacia, the traction it could exercise would be equivalent to some sixty thousand pounds.

M. Plateau has also adduced evidence of the fact that in the same group of insects, notably differing in weight, the smaller and lighter will manifest the greater strength. To ascertain its pushing power, M. Plateau introduced the insect into a card-paper tube, whose inner surface was slightly roughened. The creature perceiving the light at the end through a transparent plate, which barred its passage, advanced and pushing the latter forward with all its might and main, especially if excited a little. The plate pushed forward acted on a lever connected with an apparatus for measuring the effort made. In this case also, it turned out that the comparative power of pushing, like that of traction, is greater in proportion as the size and weight of the insect are small. Experiments to determine the weight which a flying insect can carry, were performed by means of a thread with a ball of putty at the end, whose mass could be augmented or reduced at will. The result is that during flight an insect cannot carry a weight sensibly greater than that of its own body. Consequently, man, less heavy than the horse, has a greater relative muscular power. The dog, less heavy than the man, drags a comparatively heavier burden. Insects, as their weights grow less and less, are able to draw more and more. It would appear, therefore, that the muscular force of living creatures is in inverse proportion to their mass.—*"Health," London.*

The majority of people hardly appreciate how much we are creatures of habit, nor how much habit has to do with our daily lives; yet it is our habits which give us our individual characteristics, and which make us differ from one another. Habit even affects our walk and the carriage of our body, and one can often tell a man's trade or occupation by observing his manner on the street. The old farmer, who has used the muscles of the chest more than those of the back, becomes stoop-shouldered, and he carries his arms half-flexed, because his work has developed the flexor muscles and not the extensors. There is excuse for this, but sometimes a mere foolish physical habit becomes so fixed that it is most difficult to root out. It is to habit, also, that we owe our characteristic expression of countenance.

Other muscles, like the heart, can be wrongly educated. If by running and other violent exercise long continued, it gets into the habit of working too hard, it will pump away at that rate all the time; and besides the damage of forcing too much blood to certain parts, it will wear out too soon. A person may also acquire the habit of eating enormous quantities of food, and may distend his stomach to accommodate the burden, until by-and-bye it becomes relaxed and habitually torpid. It is first slow from necessity, and by-and-bye becomes slow from force of habit. As an opposite extreme, sometimes people coddle their stomachs too much with soft, bland food, and too little in quantity, until it loses its ability to digest a good meal. Such a stomach needs a course in gymnastics, by giving it an increased amount of work to do upon substantial food. We do not mean that improper food should be put into the stomach, for this or any other purpose. Rich pastry, mince pies, fried foods of every description should never be eaten. But an invalid need not live perpetually upon milk and gruel.—*"Health," London.*

BOOK REVIEW.

—"THE SEXUAL QUESTION," by August Forel, M. D., Ph. D., LL. D., being an English translation (from the French) by Dr. C. F. Marshall, F. R. C. S., London, England. 536 pages, 6½ by 9½ inches. Published by Rebman Company, 1123 Broadway, New York City. Mailing price, $5.50.

As educators, social workers, physicians, and members of other professions inquire more deeply into the causes of much of the misery surrounding us. and also into the causes of so many physical and mental phenomena of the adolescent boy and girl, the fact is continually brought before them that much is the result of the sexual life of man. In this wonderful book, "The Sexual Question" Dr. Forel has treated the subject from two points: first, as a study of nature, and secondly, as a study of the psychology of man in health and in disease.

In nineteen chapters Dr. Forel, in a masterly manner, treats of the reproduction of living beings, the evolution or descent of living beings, the sexual appetite. psychic irradiations of love in man and in woman, ethnology of the sexual life of man and of marriage, sexual evolution and pathology, the influence of environment, the sexual question in religion, medicine, political economy, pedagogy and art.

The last chapter is devoted to Dr. Forel's conclusions, to utopian ideas on the ideal marriage of the future, and to biliographical remarks.

The book will be a valuable help to educators, lawyers, physicians, in fact to all who are interested in laws underlying the actions of human beings when moved by this second strongest instinct of all living beings. The book is highly recommended. To be had from Mind and Body, Herold Building, Milwaukee, Wis.

—"MAKING LIFE WORTH WHILE," by Herbert N. Fisher, 318 pages, 5¼ by 7¾ inches. Published by Doubleday, Page & Co., New York. Mailing price, $1.32.

The author calls the publication "a book on health—and more." It consists of three parts, part I treating of the whole question of health. part II of the individual and his health, and part III of the difficulties laid in the way of sensible reform in many of our habits by custom and by fools. This part ends by proposing measures to gain the desired end, i. e., Health. The book is well worth reading by every teacher. To be had from Mind and Body.

—"FIRST AID." Industrial edition. A manual of instruction by Major Charles Lynch and Lieutenant M. J. Shields, published by P. Blakistoris, Son & Co., Philadelphia.

This Red Cross text book has been prepared especially for the industrial workers. The present edition will also appear in Polish, Lithuanian, Italian and Slovak, so that it may be read by the majority of minors. Much of the material of this book is published also in the regular Red Cross Textbook. The descriptions of accidents, their causes, how to avoid them, and how to treat the injured are clear and good. The book ought to find a place in every work-shop and store. To be had from Mind and Body.

—"HOUSING REFORM," a handbook for use in American cities, by Lawrence Veiller. 214 pages, 5½ by 8 inches, published by Charities Publicatioin Committee, New York. Mailing price, $1.25.

As Mr. deForest points out in the introduction, this book is written by "the person most competent by knowledge and experience to deal with the subject." Mr. Veiller is qualified both as reformer and as a public official to treat housing reform in a practical way. He tells not only the need but the remedy, and how to secure it.

The contents of the fourteen chapters are: Housing Evils and Their Significance. Some Popular Fallacies. Congestion and Overcrowding. The Housing Problem a Threefold One. How to Start a Movement for Housing Reform. The Essentials of a Housing Investigation. Model Tenements and Their Limitations. Municipal Regulation. Essential Principles of a Housing Law. What a Housing Law Should Contain. The Enforcement of Housing Laws. How to Secure Legislative Reforms, and lastly, The Field of Private Effort. A Chapter of "Dont's."

This is a book that should be read by all teachers as it gives them an intelligent insight into one of the great reform movements of the day. To be had from Mind and Body.

—"HYGIENE AND MORALITY," by Lavinia L. Dock, New York, 1910, published by G. P. Putnam's Sons. Pp. 200. This book may be obtained from Mind and Body, Herold Bldg., Milwaukee. Mailing price, $1.35.

This book, by Miss Dock, a registered nurse, is well written and of especial interest to nurses and social workers. Although the author says in the preface: "Though the book is meant primarily for the nursing profession—the author hopes it may be useful to many other women as well," it seems to be too scientific, particularly the first part of it, to be understood by the laity.

The book is divided into three parts, viz.: I. The Veneral Diseases; II. Prostitiution; III. The Prevention of Venereal Disease.

It will be seen by these superscrptions that it deals primarily with sexual hygiene. As a prevention of venereal diseases. The total eradication of prostitution is proposed. Dr. Prince A. Morrow, President of the American Society of Sanitary and Moral Prophylaxis, is frequently cited.

The book is undoubtedly of value from a socialoligic point of view.

Dr. K.

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JOHANN CHRISTOPH FRIEDRICH GUTSMUTHS,

TEACHER OF GYMNASTICS AT SCHNEPFENTHAL 1786—1835.

By FRED E. LEONARD, M. D., Oberlin College.

More than ten years before Salzmann opened his private school at Schnepfenthal, Basedow had made physical training an integral part of the curriculum at the Dessau "Philanthropinum" (1774-1793). In January of 1776 Simon, one of his teachers, undertook the direct oversight of this branch of instruction and discipline, and after him Du Toit was entrusted (1778-1793) with the same task. Three years as teacher of religion and co-director at Dessau (1781-1784) had made Salzmann himself familiar with the means and methods adopted by these men, and immediately after his own school was started he assigned to Andre the direction of the daily gymnastic lesson and the Sunday games of pupils. A year later, in July of 1786, this portion of Andre's duties was turned over to *GutsMuths,* who thus became, not the first, but the fourth teacher of gymnastics in modern times in a school open to all classes of society. The pre-eminence of GutsMuths among pioneers of modern physical training does not rest, therefore, upon priority in time, but is due rather to his long period of service—almost fifty years, to the character and results of his teaching and the favorable impression which it made upon visitors, and to the series of volumes from his pen which formed what has been aptly called the first normal school of physical training for other teachers, and not in Germany alone, but elsewhere in Europe and even beyond its borders.

GutsMuths, son of a tanner in moderate circumstances, was born August 9, 1759, in the ancient Prussian town of Quedlinburg, pleasantly situated on the Bode about thirty-five miles southwest of Magdeburg and only three miles distant from the northwest base of the Harz mountains. Once a fortified Hanseatic town, it is still partly enclosed by a turreted wall, and commanded from a rocky eminence at the west by an old castle which was for eight centuries the seat of the imperial abbesses of Quedlinburg, until the secularization of the abbey in 1803. The crypt of the adjacent abbey church contains the tomb of Henry the Fowler, who founded the town in the first half of the tenth century and with others of the Saxon line of Holy Roman emperors made it one of the royal residences. The birthday of GutsMuths lies between those of Quedlinburg's two most famous sons in modern times—the poet Klopstock, born thirty-five years earlier, and Karl Ritter, the father of scientific geography, born in 1771. His own early home, No. 122 auf der Pölle, is marked by a memorial tablet of marble, given by the Berlin Turnlehrer-Verein and unveiled with appropriate ceremonies April 16, 1871. It is said that, kept much at home and denied the close companionship of other children, he would climb the roof almost daily and sit there for hours at a time to gaze away at the Harz, and over the nurseries and gardens for which the town was celebrated then and upon which Europe and America still draw for supplies of flower and vegetable seeds.

The boy's first library consisted of a great Bible illustrated with beautiful copperplate engravings, an old geography with woodcuts of the different races of men, and, best beloved of all, the "Acerra philologica," in German. This last book, containing hundreds of selections from the writings of well-known Greek and Latin authors, he read through a score of times, he said, and it may have given him his first introduction to the gymnastics of the ancients. He was also fond of working with tools, and skilful with his pencil and afterwards with brush and paints. In the spring of 1773, while he was in his third year at the *Gymnasium* or classical secondary school of Quedlinburg, his father died. Four years later, upon recommendation of the prorector of the Gymnasium, he became private tutor in the family of Dr. Friedrich Wilhelm Ritter, a respected physician in the town and medical adviser to the then abbess of Quedlinburg, Princess Anna Amelia, sister of Frederick the Great. GutsMuths now found his time fully occupied. Besides preparing his own school tasks, he must teach the two oldest of Dr. Ritter's four sons and a merchant's boy whom he had also accepted as a pupil, and to fit himself the better to discharge the new duties he studied carefully Basedow's "Elementarwerk" (1774) and especially the "Methodenbuch" (1770).

In 1799 GutsMuths entered the university of Halle, intending to take up the study of theology; but inclination led him to attend as well courses in mathematics, physics and modern languages (including English and Italian), and pedagogy, too, continued to interest him greatly. After three years in Halle he returned to Quedlinburg to resume his old position in the Ritter household, where there were now six children, five of them boys and the oldest barely nine years old. The next to the youngest, aged three, was Karl, the geographer-to-be. Only two years later, in June of 1784, Dr. Ritter succumbed to a severe attack of typhoid fever. His young widow found herself unable to continue the salary which GutsMuths had been receiving, but he was unwilling to desert the family in its time of need and was easily persuaded to remain for another year in spite of the changed circumstances.

During this same year Christian Gotthilf Salzmann was making preparations to open his new educational institution at Schnepfenthal, about seventy miles away to the south and west in a straight line. Already teachers had been selected, but outside of his own large family there were no pupils on the grounds. He decided to receive without charge, as the first of these, some promising lad not yet beyond his sixth year, and having learned of Dr. Ritter's death from a published announcement, sent two friends to Quedlinburg to see whether there might not be among his sons a suitable candidate.

As a result, Frau Ritter was asked to part with her favorite Karl. June 7, 1785, taking the boy and his brother Johannes, four years older, she set out for Schnepfenthal, accompanied by GutsMuths, and reached there at noon of the 9th. A stay of several days led to such favorable impressions on both sides that she accepted Salzmann's offer to receive *both* children, and GutsMuths consented to remain as a permanent assistant. He made the return journey to Quedlinburg with the widow, arranged his affairs in the home city, and on the 30th of the same month was again in Schnepfenthal, ready to begin the duties which were discharged uninterruptedly thereafter until within a few weeks of his death, nearly fifty-four years later.

The life-story of GutsMuths during the next half-century, apart from his work as teacher and author, is soon told. In a letter to a university friend, written in June of 1791, he speaks of his garden, and of cabinet-making and wood-turning; he has daily gymnastic exercises with the children in good weather, goes shooting in the fall, and in winter skates on the meadows and coasts down the neighboring hills; he is an industrious botanist, still takes up his brush occasionally, painting portraits especially, but also landscapes from nature, and enjoys the use of a very good pianoforte by one of the best German makers; he mentions the many distinguished visitors (Goethe, Wieland, Kotzebue, and others), but says that of more importance to him is the Gotha library of seventy thousand volumes from which he has permission to draw whatever books he desires, through a messenger who makes trips back and forth every day or two. The school itself has a good collection of books, and he has been made librarian. Together with an English pupil he has read much in that language.

Twelve years after his arrival in Schnepfenthal, on the 15th of August, 1791, GutsMuths was married to Sophie Eckardt, the eighteen-year-old daughter of a clergyman and a niece of Salzmann's wife. For some time she had helped in the domestic economy of the school. They occupied a storehouse on the grounds, at first, but after fifteen months moved into a home of their own in the little village of Ibenhain, a half-mile distant in the valley. There they gradually improved and beautified the dwelling and its surroundings, laid out a garden which became famous for its flowers and fruit, and by the purchase of adjoining pieces of ground from time to time came at length to be possessors of a considerable estate, the source of much pleasure and not a little profit. The family life seems to have been an ideal one. Eight sons and three daughters were born to the couple, and the mother of GutsMuths spent her last years with him, until her death in December of 1808. Only two of the children married during his lifetime, but they presented their parents with six grandchildren. "Father" Salzmann died in 1811, but his son Karl succeeded to the directorship and the new administration brought no change in GutsMuths's relations with the school. The completion of fifty years of teaching, celebrated June 1, 1835, found him still in full enjoyment of his powers and busy in his calling. He continued in active service up to the end of March, 1839, and died on the 21st of the following May after a brief and painless illness.

In the earlier years, while pupils and teachers were few, GutsMuths gave instruction in various elementary subjects, but especially in geography and the French language. Gymnastics was added, as we have seen, in July of 1786. Later, when he had moved to Ibenhain, he confined himself to his favorite subjects—the gymnastic lesson from 11 to 12 daily (until the summer of 1835), and geography and technology between 2 and 4. After 1802 he was swimming teacher as well. Salzmann had expected not more than twelve pupils at the start, but in the fall of 1785 there were already 13, including four of his own children, and the numbers steadily increased during the next two decades, to 49 in 1790, 52 in 1800, and 61 in 1803. The war which broke out in 1806 led to a marked falling off, followed by another rise, from 22 at the beginning of 1814 to 36 three years later, and 41 in 1823.

For full information regarding the sort of gymnastic exercises which GutsMuths practiced with his pupils we turn, of course, to his books. With few exceptions they were taken out-of-doors, in a spot set apart for the purpose and provided with the necessary apparatus. Already at Dessau, and by his predecessor Andre at Schnepfenthal, a varied list of suitable forms had been elaborated: Marching in time, walking on the balance beam and crossing ditches on the edge of a plank, jumping over a stick placed on jump stands, pole vaulting, jumping across a ditch, vaulting, carrying weights with outstretched arms, throwing at a target, foot-races, running and jumping through a long rope swung by two persons, simple free exercises indoors, skating and coasting, and long walks. Most or all of these GutsMuths continued to employ, modifying them, however, and making numerous additions as experience suggested. During the summer of 1794, for example, or before it, he has the pupils going up and down a rope-ladder, swinging on vertical ropes, climbing a mast, hanging and traveling on the under side of a horizontal beam, balancing rods on the finger, going through various exercises while standing on one foot, jumping over a rope swung close to the ground, throwing a wooden discus, wrestling, pushing against each other, lifting a weight hung on a rod and moved toward or from the hands according to the strength of the individual, estimating distance with the eye, and reading aloud so as to be heard by a person stationed at varying distances. He kept an accurate record of each pupil's performances, in order to note his needs and progress.

Some idea of the value of the contributions which GutsMuths made to the literature of physical training may be gathered from a mere list of titles, arranged in chronological order. It will be noticed that the books cover four related subjects—gymnastics proper, games, swimming, and manual training.

1793. *Gymnastics for the Young* ("Gymnastik für die Jugend. Enthaltend eine praktische Anweisung zu Leibesübungen.") Two volumes, pp. 28+672, illustrated with ten copperplate engravings and a folding sheet containing eight figures.

1796. *Games* ("Spiele zur Uebung und Erholung des Körpers und Geistes, für die Jugend, ihre Erzieher und alle Freunde unschuldiger Jugendfreuden"). Pp. 22+496, illustrated with four plates containing 16 figures. A second edition, unaltered, appeared the same year.

1798. *A Manual of Swimming* (Kleines Lehrbuch der Schwimmkunst zum Selbstunterricht ......"). Pp. 22+124.

1801. *Mechanical Avocations* ("Mechanische Nebenbeschaeftigungen für Jünglinge und Maenner......").

1802. *Games.* A third edition of the book of 1796.

1804. *Gymnastics for the Young.* A second edition of the book of

1793, but "re-written throughout and much enlarged," so as to be essentially a new work. One volume, pp. 16+528, illustrated with 12 plates containing 52 figures drawn by the author.

1809. *Mechanical Avocations.* A second edition, unaltered, of the book of 1801. Pp. 14+468, illustrated with 8 folding plates.

1817. *Manual of Gymnastics for the Sons of the Fatherland* ("Turnbuch für die Söhne des Vaterlandes"). Pp. 78+300, illustrated with four copperplate engravings containing many figures.

1818. *Catechism of Gymnastics.* ("Katechismus der Turnkunst: kurzer Abriss der deutschen Gymnastik. Ein Leitfaden für Lehrer und Schüler"). Pp. 6+182.

1833. *A Manual of Swimming.* A second edition of the book of 1798, "revised, improved, and enlarged." Pp. 38+108.

Any discussion of the contents of these volumes would prolong this article unduly. Readers may be referred to the *American Physical Education Review* IV: 14-16 (1899 March), and IX: 95 and 96, 105-107 (1904 June); but especially to Dr. Carl Euler's "Geschichte des Turnunterrichts," third edition, pp. 29-45 (Gotha, 1907), and Adolf B. Netsch's "GutsMuths' paedagogisches Verdienst um die Paedagogik, die Geographie und das Turnen" (Hof a. S., Rud. Lion, 1901. 112 pp.). Reprints, translations, or abridgments of the "Gymnastics," or compilations based upon it, appeared in Denmark, Sweden, Holland, France, Austria, Italy, Greece, England and the United States (attributed on the title-page to Salzmann!). The first edition was reprinted in 1893 by A. Pichler's Witwe & Sohn (Vienna and Leipzig), and in the same year an 8th edition of the "Games" was published by Rud. Lion (Hof a. S.). In addition to his books on physical training GutsMuths wrote numerous ones devoted to *Geography,* and rendered an important service to educational science through the *"Bibliothek der paedagogischen Litteratur,"* which he edited and published in the years 1800-1820 (53 volumes).

The *Erziehungsanstalt Schnepfenthal* has enjoyed an unbroken existence down to the present day. The modern pilgrim to this historic shrine leaves the main line of railway between Leipzig and Cassel at Fröttstedt, seven miles west of Gotha, for a short spur which leads south to Friedrichroda. Beyond Waltershausen the track bends to the left to avoid the first foothills of the Thuringian Forest, passes Ibenhain, and then curves sharply to the right again to disappear up a narrow valley. At the mouth of this, four miles from Fröttstedt, is a little station where the traveler leaves the train. A few steps to the west, along a road which follows the base of the ridge, bring him to the grounds of the school, a former villa site, and on the rising slope, through the evergreens, appears the long main building, two stories high with a mansard roof and a tall pointed tower in the center. Behind the structure rise successive ranges of steep hills, and the view in front covers a wide, open, cultivated valley in which at least five villages can be counted. Within all is severely plain, but neat and comfortable. The walls of the reception room are almost hidden by rows upon rows of small portraits of former pupils.

Retracing his steps to the station, and crossing the track and a stream just beyond it, the visitor passes the village of Rödichen at the right and climbs an oak-covered ridge which leads off to the north, at right angles to the first. Here he finds a level spot which constituted the original *Turnplatz* or outdoor gymnasium. A rustic fence encloses the small area, shaded by oaks and beeches, and a balance-beam, pairs of fixed jumpstands, and other apparatus of more recent date recall the scenes depicted in the "Gymnastics" of 1793. Close to the Turnplatz, at the north, lies the cemetery of the school, containing among others the graves of GutsMuths and "Father" Salzmann. The former is marked with a flat stone slab, inscribed with the name "J. Ch. F. GutsMuths," followed by the place and date of birth and death.

A brisk walk of ten minutes from the school out into the valley carries one to the village of Ibenhain and along the length of its single street. The row of houses on either side are set close to the road, and the barnyards which separate them are hidden by tight, high fences, pierced by large double gates for teams and a small one at the side for the use of human beings. Down the center of the street flows a stream. At the far end rises the village church, and adjoining it—the last house on the right—is a two-story dwelling, better-looking than its neighbors, the sides plastered, but the gable end, facing the street, slated from peak to ground. A cast-iron tablet set in the gable bears the inscription "F. F. F. F. Hier wohnte Joh. Christian [read *Christoph!*] Friedrich GutsMuths, der Bergründer der deutschen Turnkunst, geb. in Quedlinburg den 9. Aug. 1759, gest. in Ibenhain den 21. Mai 1839.—Gestiftet von deutschen Turnern am 9. Juli 1861." It was unveiled on the 20th of October, 1861, in the presence of turners from Eisenach, Erfurt, Gotha, and Waltershausen, and pupils and teachers from the Schnepfenthal school.

A SEVEN-DAY TRAMP THROUGH NORTH-EASTERN PENNSYLVANIA.

By William A. Stecher.

We're off! Only one who has set out on a tramp equipped for anything reasonable that may occur knows what this means. Yes, the three of us were off for a week's tramp. Dressed in serviceable clothes, the few necessaries packed in a knapsack slung over the shoulders, we started carefree on our trip from Chestnut Hill, Philadelphia, at eight o'clock on a bright, sunny September morning. While we had outlined our route in rather bold strokes and eventually hoped to land at the Delaware Water Gap, we had no definite plan which held us down to doing anything certain at any time or on any day. We just knew "that we were off," that the sun was shining, that it was a glorious day, and that we were glad to get out of the city into the great open country.

What wonder then that we fell into the error of most trampers and walked more on the first day than we should. We landed at Collegeville, on the Perkiomen creek, shortly after half past one o'clock, having marched seventeen and a half miles. Hunting up one of the many boarding houses located here, we ate dinner. After a rest we secured a skiff and rowed up this beautiful creek for a swim. The late afternoon was spent lounging under some of the large trees bordering the creek. After supper we were soon asleep—all in one large room.

Our expenses for dinner, supper, sleeping and breakfast (next morning) were $1.00.

The second day found us up early—and stiff. This day's tramp was up the Perkiomen valley. The road wound up the valley among rich farms—cider pressing was in progress in several places—past several old and flourising towns.

About noon time we reached Perkiomenville. Dinner at the hotel cost us each forty cents. After a rest we continued our tramp.

The main industry in most of these towns is cigar-making. Here are located enormous cigar factories, in which whole families—father, mother and the children—are employed.

The inhabitants are mainly Pennsylvania Germans; it is perfectly safe to speak German to anyone you meet on the road. In fact, if inquiries as to direction, distance to the next town, condition of the road, etc., are made in German one is immediately looked upon as a friend, and is certain to get not only all the information asked for, but also many inside glimpses into the life of the inhabitants.

We reached Palm early enough to take a bath (bath rooms are not found in all hotels) before supper. We slept two in a room. Supper, rooms and breakfast cost us each one dollar.

People rise very early in these villages. We were awakened at six o'clock and at seven had a splendid breakfast, in company with the proprietor of the hotel, his wife and all the children. We were treated as guests of the family. Eight o'clock again found us saying "Auf Wiedersehen," and off on the third day's tramp.

About ten o'clock we had our first experience with a rainstorm. It came up so suddenly that we had no chance to go to a house. In fact, none was in sight. A small, low, thickly leaved tree gave us shelter until the

Delaware Water Gap, Pennsylvania.

shower passed over. About eleven o'clock we passed over the watershed dividing the water flowing toward the Perkiomen and the Schuylkill from those flowing toward the Lehigh.

The view from this crest is magnificent. A friendly apple tree gave us shade and fruit as we sat under it and enjoyed the scene across the great valley beyond.

An hour's walk down hill brought us to Macungie. Dinner at the hotel cost each forty cents. We were anxious to get closer to the Blue Ridge mountains and that as quickly as possible. Therefore after dinner we took the trolley to Allentown (cost 15 cents). After a short tour through the bustling town we visited the famous duck farm, where thousands of ducks are raised for eastern markets. Then came another trolley ride to Slatington (cost 25 cents), the Blue Ridge mountains now being directly in front of us. After an early supper a visit was paid to one of the great slate quarries with which this region abounds. Supper, rooms (two in a room) and breakfast cost us each $1.25.

Our fourth day's walk was begun at eight o'clock in a drizzle. Crossing over the Lehigh river, we turned up the tow path of the canal. Since the railroads were built the canal is not used much. We met only two canal boats, filled with anthracite coal. The large and numerous locks were interesting. Crossing the moving water of the overflows of the canal on a narrow board is a unique experience for a city dweller, as a "dizzy spell" will be certain to precipitate one into the water.

The scenery, where the Lehigh river forces its way through the mountains, is very fine. A tramp of nine miles brought us to Weissport. Crossing the canal we were received by the martial strains of "Has Anybody Here Seen Kelly?" played by the city band with more fervor than correctness. Not expecting such a royal welcome on the threshold of a town we were highly elated. Upon inquiry, however, we were told that "the band is practicing; day after tomorrow is Labor Day." A good dinner at the hotel soothed our disappointment, and a trolley ride up Flagstaff mountain (fare 10 cents) brought into view such wonderful scenery that we soon forgot the band.

The grandeur of the view one has from Flagstaff mountain down upon Mauch Chunk and the Lehigh valley surely reminds one of Switzerland.

The same trolley took us down the other side of the mountain and landed us at the famous "Switchback railway." This is a combination of two inclined plane railways and two gravity railways. The route traveled is twelve miles long. The fare is seventy-five cents a person.

The walk from the station down the steep streets into Mauch Chunk reminds one strongly of the steep roads in Alpine villages. After supper at the hotel (cost fifty cents) we trolleyed back to Weissport to sleep. Having found no "running water" in any of our rooms during the trip, we were nevertheless awakened during the night by receiving a shower bath. Rising quickly we discovered that it was raining heavily and that a leak in the roof allowed the water to drop on our heads. Moving the bed close to the door we were soon again in deep sleep. Dinner, room (including shower bath) and breakfast cost each one $1.25.

Leaving Weissport on the fifth day of our journey at half past eight we turned from the Lehigh valley to cross the watershed between it and the Delaware river. The walk was along the north side of the Blue Ridge, part way through a great stretch of forest country. It must have been about half past one when, tired and hungry, we reached Trachsville, a village consisting of a small hotel and a few dwellings. Upon inquiry if one could get anything to eat we were told that "we eat dinner at twelve o'clock." The dishes evidently had already been washed, for we saw two young girls violently rocking themselves on the porch. Arguing with the young man in charge that we did not know the local customs, we entered the barroom (all country hotels have barrooms). Discovering several jars filled with candy, we bought some and sent it to the young "kitchen mechanics" with our compliments. This was a wise move, for after the candy was accepted and eaten one of the girls appeared and said she would see "what was left over." After a short time she appeared with an enormous loaf of home-made bread, a few pounds of butter, a crock of home-made apple butter, one large home-made sausage, a half gallon of milk and a huge apple pie. When, after a half hour's hard work, we found that we could not eat all, and asked for our bill we found that we each had to pay twenty cents.

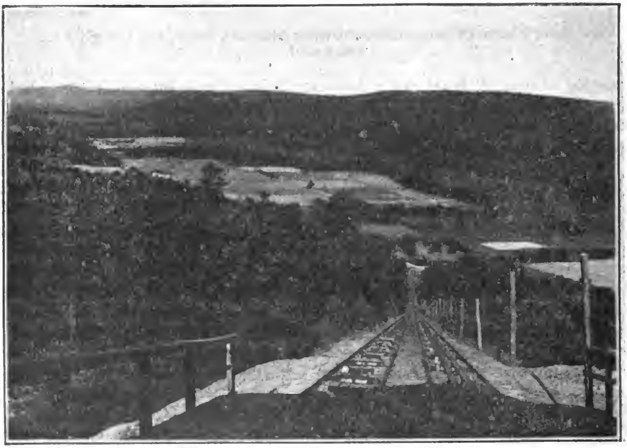
View from Flagstaff Mountain, showing Mauch Chunk, the Lehigh river and canal.

Hearing that a "real" stage coach left Broadheadsville every morning at seven o'clock we had a farmer drive us there, which cost each of us forty cents for the eight mile ride.

The rest of the late afternoon was spent visiting a small lake in the vicinity. Supper, bed (two in a room) and breakfast in the quaint, neat hotel at Broadheadsville cost us each 75 cents.

We were up very early on our sixth day out, for this was Labor Day, and we were to take the stage at seven o'clock. We found the stagewach to be a rather long, covered wagon, with a roof, but open at the sides. It was already comfortably filled by farmers and their families in holiday attire, bound for Straudsburg, twelve miles off. Its driver's name was Adam. Well, Adam knew his business. He stopped at every little town, took everything (including the mail) that was billed for Straudsburg. He loaded on more passengers, rigged up an extension behind the wagon, and put a few coops filled with live chickens and geese there. Bags of potatoes were tied under the wagon. A bed and mattress were strapped on top. Later side-extensions were improvised. When more people came, five passengers (two from our party) had to climb on the top of the wagon. We surely "were a sight" when we drove up the main street of Straudsburg filled with hundreds of visitors. Adam, however, always kept his passengers in the best of humor by witty remarks about anything he saw or passed. Some day we will be certain to find him as the traffic manager of some city's street car system. At the end of the trip we were taxed fifty cents apiece for the privilege of being allowed to ride with Adam.

After we had walked through the city we had a good dinner at one of the smaller hotels (thirty cents each). A trolley ride through beautiful country (fare 10 cents) brought us to the Delaware river. The tramp was then continued along the well built road between the many beautiful hotels that line the river, and through the famous Delaware Water Gap. A swim in the river at the lower end of the gap was refreshing before the walk to Portland was resumed. Supper, rooms (two in a room) and breakfast cost each of us $1.25.



View from Mt. Jefferson, showing one of the Inclined Planes of the Switchback Railway, Mauch Chunk, Pennsylvania.

We were now at the northeast end of our trip. The seventh day was used to trolley homeward via the well known Liberty Bell route to Bangor. At Nazareth a stop was made to visit its old academy. Then we rode on to Allentown. Eating dinner there (thirty-five cents), we turned off to the east, passing through many small towns and arrived in Philadelphia at four o'clock.

We had had a splendid vacation of a week; had lived out of doors most of the time; had seen and tramped through one of the most interesting parts of Pennsylvania. Including all expenses, the whole trip cost each of us fourteen dollars.

VENTILATION IN ITS RELATION TO HEALTH.

By William G. Snow.

In connection with the crusade that is being carried on in many parts of the country by heating and ventilating engineers to educate the public to a proper appreciation of the necessity for adequate ventilation of their public and other buildings, including their homes, the following, taken from a lecture delivered by William G. Snow at Cornell University last May, forms a careful review of the subject that will prove interesting reading to the engineer and layman alike. Mr. Snow's lecture was delivered in the course on Sanitary Science and Public Health, in co-operation with the New York State Department of Health:

"While it is admitted," said Mr. Snow, "by all thinking people that ventilation must promote health, it is not realized to what extent the converse of this statement is true; that is to what extent ill health is caused by insufficient or ineffective ventilation."

Macfie, in his recently published work, "Air and Health," says:

"Air containing merely the CO^2 and moisture usually contained in vitiated air will not produce the effect of vitiated air, and vitiated air, therefore, must contain an additional constituent. This additional constituent, though undetected by chemists, is probably detected by the nose, for it is well known that air is oppressive and harmful not so much in proportion to the amount of CO^2 and moisture it contains as in proportion to its *smelliness*. The very fact that the nose is so sensitive to such odors would seem to suggest their harmfulness."

In addition to the carbonic-acid gas, the effluvia and the humidity mentioned, which affect the comfort and well-being of persons, are the dusts to which Dr. T. Mitchell Prudden's little book "Dust and Its Dangers" is devoted.

Outer air contains, of course, more or less dust which when admitted to a building tends to settle. Dr. Prudden observes that even *ordinarily efficient* systems of ventilation do not carry off any considerable proportion of the dust particles from closed still rooms . . . and when by a system of *forced* ventilation we cause large volumes of dust-laden air from out-of-doors to pass through them, we are actually, so far as micro-organisms are concerned, cleansing the air and sending it out much freer from germs than when it entered, these having slowly settled as the air makes its way from the entrance to the exit of the ventilating openings." He says:

"When we consider the comportment of dust particles in closed rooms, we see at once that the great renovating and cleansing agencies which are so efficient out-of-doors are, except on special occasions, absent, namely, the winds and strong air currents and the more or less frequent and prolonged wettings. . . . A rainfall, to a certain extent, tends to free the air of its germs by washing them down. . . ."

Dr. Prudden points out that:

"We should always remember that bacteria do not become detached from the surfaces or materials on which they grow or are lodged while these are in a *moist* condition. . . . ."

The most obvious means to prevent the accumulation of dust within enclosures is to remove it from the entering air.

While the harmful effect of foul air may not be immediate further than its effect on one's comfort or mental acuteness, it is generally conceded that frequent and protracted exposure to such air, as in the case of poorly ventilated school buildings, results physiologically in a lowering of the vitality of the occupants, rendering them more susceptible to disease and considered economically results in a lessened efficiency on the part of both pupils and teachers.

Playfair asserts that, in modern hygiene, 'nothing is more conclusively shown than the facts that vitiated atmospheres are the most fruitful sources of disease."

Tuberculosis and pneumonia are most prevalent among persons living or working in unventilated rooms. These diseases are caused by specific bacteria which, for the most part, gain access to the air passages by adhering to particles of *dust* which are inhaled. To bad air we attribute much of the anaemia, the pallor, the neurasthenia, the general ill-health of slum dwellers and factory workers and most persons engaged in sedentary indoor occupations."

As to the effect of dust, Mr. Prudden says:

"Very moderate amounts of dust particles in sensitive persons cause such a degree of irritation of the respiratory organs as either to deprive them of robust health or predispose them to the acquirement of various diseases which with unirritated lungs they would readily resist.

"As to the bacteria . . . there are unfortunately a few species which, when they once find lodgment in one place or another in the organs of respiration, may grow and multiply, and successfully resisting all the protective agencies of the body, set up distinct, persistent and even fatal disease. These forms of bacteria which can or in these regions commonly do this, are insignificant in number in comparison with the harmless species with which dust is usually swarming. But few as they are they have an extreme significance. If it were not for these few species of disease-producing bacteria people could perhaps afford to be as indifferent as they are to dust and its dangers. . . ."

It has been pointed out among the causes of atmospheric vitiation and discomfort that high temperature and humidity have much to do with the oppressiveness of the atmosphere in occupied spaces.

As to desirable and practicable relative humidities in rooms occupied in winter by persons in health, taking into consideration the cost of maintaining a high relative humidity in cold weather and the trouble from condensation on windows, I am inclined to favor a range from 50 per cent to 55 per cent according to the weather, rather than a higher relative humidity.

Referring to humidity as applied to manufacturing plants, this was discussed in a very interesting manner by George V. S. Michaelis in a paper entitled "Sanitary Conditions in Ventilating and Humidifying Cotton Mills."

Mr. Michaelis says after pointing out the economic waste due to insufficient heating, resulting in chilled fingers of mill operatives:

"Pure air is, however, fully as important in influencing product as warm fingers. *Adequate ventilation,* therefore, is as vital a factor in summer as in winter.

"Curiously enough, humidification has developed in the minds of most mill men as a purely mechanical proposition; that is to say, in its relation to improved fiber conditioning. Adequate humidity has been recognized as increasing output through strengthening the yarn, reducing electrical tension, improving the yarn by causing the fibers to engage together more closely, and by giving greater elasticity at the same time that greater strength is given. This may be called the direct effect of humidification.

"Proper attention has *not* been given by mill men to the indirect effect of humidity which is upon the *working capacity* of the operative.

"Unbiased British officials and certain American engineers have demonstrated that, considered both immediately and ultimately, the direct or mechanical value of humidity works on parallel lines with the indirect or operative-working-capacity effect, and that the best results in dividends are secured by considering direct and indirect (mechanical and personal) effects together, in other words taking the resultant of the two working factors.

In certain buildings, where the results of changing from poor to good ventilation have been carefully observed, a marked improvement in the general health of the occupants has been manifest. For example, the records of the United States Pension Bureau show that when the offices of the department were located in scattered and poorly ventilated buildings, 18,736 days were lost by employees through illness in one year and about the same number for several successive years.

When the department became established in its new well-ventilated quarters the loss was reduced to 10,114 days' absence on account of illness, the working force being larger and the work increased.

The gain effected is not to be measured alone by the days' absence saved, but by the greater vitality and efficiency of the entire working force.

It is stated that improved ventilation resulted in the reduction in the death rate in the Dublin Lying-in Hospital from 50 per cent to 5 per cent for equal terms of years.

In the Boston City Hospital good ventilation is said to have given reductions in death rate from 44 per cent to 13 per cent in surgical wards and from 23 per cent to 6 per cent in other wards.

In regard to dwellings, investigations among the dwelling-houses of Dundee, Scotland, showed that with an increase in air space per occupant there was a great falling off in the death rate. With air space per person in the ratio of 4 to 1, for example, the death rate was in the ratio of about 12 to 21, showing a reduction of over 40 per cent in the case of the larger spaces.

Even though there be no method of ventilation provided, the mere abundance of space per occupant secures a certain air change owing to the fact that no partitions, floors or ceilings are perfectly tight, hence the greater the space per occupant the greater the surface of surrounding walls, etc., and the greater the accidental air leakage of spontaneous ventilation as some put it. ...

Prof. Winslow, of the Mass Institute of Technology, in a paper on "The Cash Value of Factory Ventilation," mentions that:

"Efficient production requires skilled and practical workers, in good physical condition, applying themselves, with energy and enthusiasm to their tasks.

"Irregularity, of attendance, and the physical sluggishness and nervous inattention which accompany lowered vitality, mean direct *money* loss to the employer of labor, as well as a burden on the community at large."

As an example showing the results of improved ventilation the paper calls attention to the operating room of the New England Telephone and Telegraph Co. at Cambridge, Mass.—a long room having a capacity of 30,000 cu. ft., extending from front to back of a business block. Fifty or sixty women are employed in this room as operators.

"During the warmer months no difficulty has ever been experienced in ventilating the room by means of large windows at each end and by the use of electric fans. In the winter time, however, it was impossible to secure adequate natural ventilation without undue exposure to drafts. In the spring of 1907 a simple but efficient system of artificial ventilation was installed. . . .

"A marked improvement in the comfort and general condition of the operators followed this change and the betterment was sufficiently marked to show itself in a notably greater regularity of work."

Statistics collected and tabulated show that prior to the installation of the ventilating system *for the three winter months,* January, February and March inclusive, 4.9 per cent of the force were absent in 1906 and 4.5 per cent in 1907. With the ventilating system in use the absences for the same months in 1903 fell to only 1.9 per cent; a striking reduction.

Perhaps nothing has focussed the attention of the General public on the *necessity* of fresh air so much as the crusade now being waged against tuberculosis. Dr. Woods Hutchinson, in his book, "Preventable Diseases," brings out in a most vivid manner the wonderful changes wrought in the prevention and treatment of this disease.

He advises us to learn to sit or sleep in a gentle current of air all the time we are indoors.

If ventilation could be had for little or no cost above that for heating alone, there would not be the "hue and cry" against it on the part of those whose "pocket nerve" is touched.

The fact, however, that in cold climates adequate ventilation costs money should not be allowed to stand in the way of its more general compulsory adoption.

Those who are most in need of it are, as a rule, least able to demand it, hence the necessity of the strong protecting the weak through the enactment of legislation to secure to children in schools, to adults in public buildings and to workers in factories and shops an adequate volume of pure fresh air. It is not pleasant to consider that in crowded, unventilated rooms the air must be breathed and rebreathed, nor is it pleasant to consider the other causes of atmospheric vitiation within enclosures as pointed out.—Heating and Ventilating Magazine.

PNEUMONIA AND DUST.

While the old time unreasonable dread of contagious disease has been declining because of the growing assurance that modern medical science has advanced sufficiently in its knowledge of disease distribution to point out the special dangers involved and their successful avoidance, there has developed a well founded feeling that many diseases formerly considered as due to causes within the individual may prove under certain circumstances to be communicated from without. After all, even a quarter of a century ago very few physicians were convinced that tuberculosis was anything but hereditary, and most refused to accept the notion just then being introduced that it was contagious. A half century ago the idea of pulmonary consumption ever being communicated to those in close contact with sufferers from that disease would have been very generally scoffed at by medical men as well as the public. There are other diseases in which the existence of a certain measure of communicability is just beginning to be clear to progressive medical science. Among these the most prominent is pneumonia.

It may seem needlessly alarming to class pneumonia among the possibly communicable diseases, but the present situation with regard to this affection is sufficiently serious to justify considerable alarm. Professor Osler, one of our most distinguished American medical authorities, said of the disease recently:

"The most widespread and fatal of all acute diseases, pneumonia, is now 'The Captain of the Men of Death,' to use the phrase applied by John Bunyan to consumption."

This declaration is called forth by the recent mortality statistics of our large cities. While other diseases cause every year a decreasing mortality in proportion to the population, the death rate from pneumonia is on the increase. The death rate from consumption is notably less than it was even a decade ago; that from pneumonia is alarmingly greater. This increase in fatality has come just during the period when the better sanitation of our cities has seen a material reduction in the general mortality of even crowded centers.

During the last quarter of a century the average age at time of death in this country has increased from about 31 years to over 35 years. The three most important causes of death remain—pneumonia, heart disease and consumption. While the mortality from pulmonary tuberculosis has been notably decreased and the expectation of life after the development of heart disease has become much more favorable, the fatality of pneumonia is ever on the increase. The incidence of pneumonia is directly in proportion to the density of population; and as the trend of our modern life is to gather people more and more in crowded urban centers, the outlook is discouraging.

It is often assumed that pneumonia is almost exclusively a disease of the cold weather. It is the custom to associate it with the catching of cold. The main basis for this is the fact that the affection is usually ushered in by a chill. Pneumonia is, however, a disease of any season of the year when the conditions of its development are fulfilled. These conditions are not exactly known, but are commonly bound up with the bringing together of many people in more or less confined spaces.

The history of a case of pneumonia usually includes the presence of the patient in a crowded hall, theater, church or some numerous assembly within a few days before the development of the affection. The germs of the disease evidently get into the air and are taken up by the respiratory mucous membranes under such circumstances. In normally healthy individuals they fail to develop, but in those who are run down from overwork or worry or some pathological condition, or who are temporarily predisposed by exposure to cold air when fatigued or when hungry, the germs find a favorable soil for luxuriant growth. At times there may under such circumstances be apparently epidemics of the disease. There have been several such groups of cases at schools. There has been no doubt in the minds of hospital physicians who have seen groups of cases occur in wards that contagion is at times an important factor in the spread of the disease.

The gleam of hope in the prospect of amelioration of the present conditions with regard to pneumonia is to be found in reliance on sanitary precautions to lessen opportunities for the distribution of the specific germ of the disease. These must concern themselves especially with dust and its dangers. Greater care will have to be insisted on with regard to the careful cleaning of rooms in which crowds of people collect. This may even require the replacing of the carpeted floors of theaters by polished hard wood, which will have to be kept scrupulously clean. The cleaning process will have to be done in the early morning hours, giving ample time for the dust to settle before the opening of the theater. Sunlight is practically entirely excluded from our theaters at the present time by the supposed necessities of the architectural problem involved in the confined space that must be utilized. The sun's rays are the great natural antiseptic, the most powerful and universal bactericide we know. If they could be allowed to penetrate freely for several hours on a clear day into rooms meant for the accomodation of crowds they would do more to make the space healthily clean than even the minutest possible cleansing precautions. The health regulations of the future will doubtless impose the necessity for the admission of direct sunlight into theaters just as the police regulations require fire escapes.

Meantime, of course, such proposals may seem Utopian and the theory on which they are founded far fetched. Much stranger things have happened, however, in the history of applied sanitary science than the acceptance of such common sense ideas. The city sanitary engineer of the future will consider it quite as objectionable, or even more so on the score of health, to have dusty streets than to have malodorous streets. A special effort will have to be made to bring people to the realization of the necessity for such at present apparently unwarranted sanitary interference, but the current popular attitude in matters of public health is so much in advance of that of twenty-five years ago that the outlook is not discouraging. Much will have to be submitted to in order to lessen the ravages of this most fateful of the nursing sisters of death—pneumonia. Dust and its dangers for the respiratory tract, not because of its mechanical irritation, but its germ contents, must be the text that will lead to a proper appreciation of present conditions and the means necessary for their correction.

About this time every year in our large cities the mortality due to pneumonia becomes a marked feature of the mortality report of the Health Department.

There is no doubt that pneumonia has actually increased in frequency to some extent, tho not by any means to the extent that seems to be indicated by the mortality record. A considerable share of the deaths in pneumonia—more than one-half of them—occur in children under five years of age and in old persons beyond sixty-five. With regard to both these classes of patients it was not the custom, until comparatively recent years, to seek out the direct immediate cause of death so carefully as is done at the present time.

Tuberculosis used to be the most serious foe to humanity, but now its colleague in the realm of pulmonary diseases has surpassed it. There is an actual increase of pneumonia among healthy adults, and the disease is every year claiming more and more victims in proportion to the population. The main causes of this are that, as population grows thicker, dirt and dust of all kinds, as well as the exhalations of others' lungs, get into the air we breathe and becomes sources of infection. It is typically a disease of the city rather than the country, and is not due to exposure to cold nearly so much as to the inhalation of infectious material from other persons. These causes for its development furnish the best hints for its prevention.

As to its treatment, not much can be said beyond the fact that all symptoms which develop must be promptly met and treated, in order that they may disturb as little as possible the patient's health and strength. Besides this, the most important thing is that there shall be a plentiful abundance of fresh air, and that this shall be admitted directly to the room. The presence of several persons in the room must not be permitted, and lights and other sources of atmospheric vitiation must be, as far as possible, excluded. In our hospitals better results are obtained by treating patients suffering from pneumonia out in the open air, on the roofs of hospital buildings, or under tents in the yard, than in any other way. A distinguished Canadian specialist in pulmonary diseases declared that he would rather be treated under the trees in the park than in the best appointed hospital in the city.

As to the fatality of the disease, the expression of the old English physician two centuries ago must not be forgotten. He said: "It is much more important to know what sort of a patient has the disease than what sort of a disease the patient has." The outcome in pneumonia depends much more upon the condition of the patient before the disease developed than on the severity of the attack itself. This is, of course, a general rule to which there are exceptions, but the exceptions are few and far between. All depends on what the patient takes into pneumonia with him. If he has an affection of the heart to begin with it will be a miracle if he escapes with his life. If there was any kidney disease when the pneumonia began, then he will almost surely die, overwhelmed by the toxins of the pneumonia, which he is unable to excrete because of the conditions of his kidneys. If when he was younger he suffered from tuberculosis his recovery from pneumonia is much more doubtful than would otherwise be the case. The recovery will usually not begin by crisis with rapid convalescence, but will come by lysis and a long, slow climbing up of the hill to health. This represents more nearly what is known about pneumonia at the present time than any sensational reports with regard to the disease; and it makes clear the necessity that those who already know themselves to be suffering from diseased organs are under of taking precautions that will enable them to avoid a disease which is almost sure to be fatal if it comes.

"The Independent."

POSSIBILITIES OF APPLIED HYGIENE IN OUR SECONDARY SCHOOLS.

By EMILY COPE SMEDLEY, Westtown, Pa.*

The invitation to speak to you today came to me with a large degree of surprise. Nevertheless I consider it a privilege to have this opportunity to share with you the results of our practical experience with Applied Hygiene at Westtown School.

Allow me to state briefly that Westtown, with an average attendance of 230 male and female students, was founded by Friends in 1799 for children who have membership with them, and that it has stood for all-round secondary education ever since.

Gymnastics were introduced in the year 1887 and have been taught (to the girls) three times a week during regular fifty-minute school periods since that time. Every girl is measured and tested each year, and in addition to this she is carefully examined for heart, throat and lung troubles by the school physicians.

The school is located in the midst of six hundred acres affording ample opportunity for out-of-door life in way of games and such exercise as cross-country walks, camp suppers, etc.

A well-organized Athletic Association among the girls has been in operation for years. It includes five subdivisions: Tennis, Hockey, Basketball, Swimming, and Skating, each governed by its own rules and regulations. The girls go in for these different sports primarily for the pleasure and secondarily to acquire skill, self-control and general efficiency. When certain standards are reached they win their class numerals as reward of their success. All the students belong to this Association and elect, in season, whichever sport they wish. This makes it possible for every girl to take part in some active game every afternoon between school and supper.

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* Read at the meeting of the Philadelphia Physical Education Society, October 29th, 1910.

Exercise regulations demand that one hour shall be the minimum amount of time spent out-of-doors each day (rain or shine) and that at least three days in the week the girls must take part in some active sport or game. This last rule was made simply to help a few lazy, inactive mortals to get into things and learn what real fun is.

Our out-of-door equipment is unusually good, and any fine day the casual visitor may see at least three-fourths of the girls distributed over six tennis courts, the hockey and basketball fields, and swimming pool. And the beauty of it all is that our pupils appreciate their blessings and are thriving in good Chester County air.

Swimming is optional in the fall, the pool being open three afternoons every week. During the Spring Term formal gymnastics stop and swimming classes take their place. All who do not know how to swim by that time are definitely taught and at the close of the school year about ninety per cent are perfectly at home in the water.

As soon as a girl can swim correctly the three recognized strokes (chest, sides, and back, a distance of 400 feet), and also the length of the pool twenty times in ten minutes (a distance of 1,000 feet given as an endurance test), she is awarded her class numerals, which she wears upon her sweater, a recognized compliment. The complete test covers a distance of 1,400 feet, which is 80 feet more than a quarter of a mile, but it is only 1,000 feet, which is accomplished in ten minutes.

Girls who make the school teams in hockey, basketball, and tennis, or who pass an examination in fancy skating also are entitled to class numerals. As soon as snow comes, it is gleefully welcomed. The boys make a coasting track, and sledding, on flexible flyers, becomes the height of fashion and is heartily enjoyed by all ages.

If any one girl succeeds in acquiring three small numerals (like '10 or '12) she is entitled to one large set (like 1910 or 1912), which shows at once her athletic standing. Thirteen girls constitute the total number having received large numerals of their classes, and three of these girls have excelled in every one of the six athletic divisions and might have worn two sets if they chose. There is no lack of interest in athletics at Westtown.

The girls do not have what is commonly known as a Field Day with the hundred-yard dash, broad and high jumps, hurdling, etc., and thus far they have not missed it, which relieves me of a responsibility which I prefer not to shoulder for girls of secondary school age.

Thus far I have given you an outline of the Athletics, and while they are doing much toward increasing the health and happiness of the children, there is still another department which is closely associated and is playing a very important part.

Three years ago a thoroughly practical Hygiene Course was introduced. We believe with Mathew Arnold "that conduct is three-fourths of life, and that is no less true of the physical than of the moral and intellectual life," and further, since training is a matter of life-long importance and consists largely in observing proper rules of every-day life, we are trying to inculcate in our pupils those habits of healthful living which relate to their personal and community life.

This is brought about by the direct study of the simple facts of hygiene as practiced individually. So that correct habits in eating, sleeping, exercising, bathing, etc., may become, as Montaigne has said, "second nature."

We want them to have the spirit of personal ambition as well as social helpfulness, and it is by this method that we have approached them, and it has been through their loyal co-operation that we already observe a marked improvement in health conditions.

In order to judge what is being accomplished we have a "Health Register" which is decidedly unique, containing a list of personal questions which they answer each day for a month. These cards are carefully examined once a fortnight and marked on a regular basis, deductions being made wherever shortage occurs, and at the end of the month credit is given each child upon the extent to which she has lived hygienically. A grade is entered on their monthly reports and goes home to their parents along with other marks. In this way Applied Hygiene has become a real and vital factor in each girl's life and further is recognized as a part of the school course.

In addition to this practical side a short course of six lectures is given to the First, Second and Third year girls, while a regular course in Physiology is given in the Senior year.

Returning to the Health Register, I would like to say that from them I have been able to make an intelligent study of the girls and to help them to understand the importance of not only knowing, but what is far more difficult, living up to the best standards in these matters of every day life. It is gratifying to observe the change in public opinion in regard to the simple matter of eating between meals, for instance. It had long been the custom at Westtown (as well as at many other boarding schools) to have crackers, cake, jelly, candy, etc., always on hand to eat between times. This seemed, in the minds of the children, a necessary part of school life.

About three years ago one of the school physicians made some remarks to the children about the disadvantages and evil effects from eating too often and of questionable articles. The interest of the girls was aroused, and I determined to make a special study of this particular question.

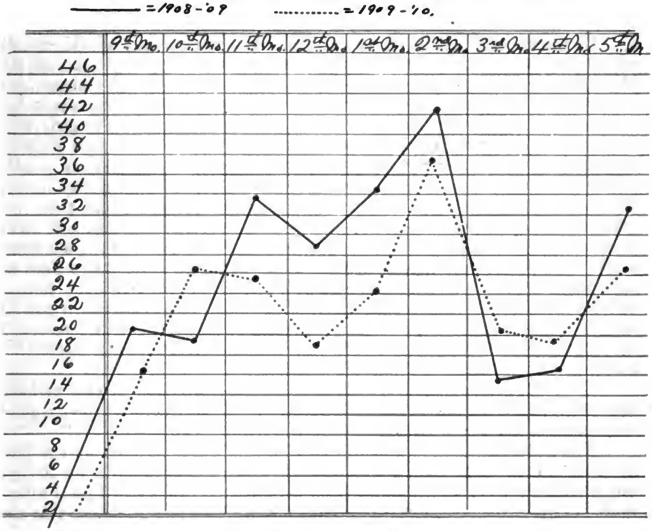
Fruit was put on sale, and they were encouraged to eat fruit at all suitable times and it would not be counted against them, neither would small quantities of candy when eaten shortly after any regular meal.

With this understanding we started the crusade. I looked over their cards once in two weeks and reported to the student body the progress which was being made, and at the end of three months interest was running high, for in Tenth Month the average number of girls not eating between meals was twenty, while in the First Month following seventy-six reported clear. Now it is the exception for a girl to eat except at meal time, and the best part of all is, that they feel better and are healthier and voluntarily acknowledge the fact. Each girl averages from eight to ten hours of sleep, and windows are always open at nights.

In case of bathing the showers are in great demand not only after exercising, but also before breakfast, when it is customary to see a line waiting for cold water showers. Thus the germ for correct self-government in these simple every day matters is getting a good start.

It also falls to my lot to have charge of the excuses issued on account of illness and to keep a record of the same. I am therefore in a position to make a comparative study of health conditions as they exist during different months of the same year, and also for different years.

CURVES REPRESENTING THE NUMBER THAT WERE SICK DURING THE SCHOOL YEAR 1908 AND 1909, ALSO 1909 AND 1910.



In making a health curve for different months of the past two years, such a curve registers lower in six months out of nine during the second year of the experiment. In other words, there was less sickness in Ninth, Eleventh, Twelfth, First, Second and Fifth Months of 1909 and 1910 with more girls in the school than there was during the same months of the previous year.

The total number of girls who missed some school in 1909-1910 was twenty less than in 1908-09, notwithstanding the fact that there were ten more on the roll the year we had less sickness.

The curve ran highest in Second Month of both years, showing that vitality and resistive power is down at that time.

A small hospital was built three years ago, making it possible to completely isolate any contagious disease. Since we have had it there have been six cases of measles, three at a time twice. This includes all cases of contagion in the whole school.

Having thus reduced the possibility of spread in cases of simple contagious diseases, our next step is to determine the cause for the increase in the preventable minor illnesses during certain months, and if possible to fortify against attacks of colds and tonsilitis, etc. Can it be that because we live more shut up in the First, Second and Third Months the cold germs have a better opportunity to cause trouble? If so, let us have better ventilation all the year around.

It seems to me now that one of the chief educational reforms of the future would be the better ventilation of the school rooms, which will inevitably bring with it a direct effect upon the learning capacity quite apart from the questions of physical health.

Our principal and superintendent are both thoroughly awake to all educational movements in other sections, and have interested the rest of the Westtown community in the experiment made by Dr. Evans in Chicago, his fresh air methods and results. This fall arrangements have been made for out-of-door study during vacant periods for a group of twenty-five girls who are less strong than the rest. This studying is done on a porch with a southwest exposure, and adjoins the regular study hall. These pupils are a self-regulating body and report any disorder to the teacher who has charge inside. Thus far their keen interest in the success of the plan has kept them remarkably good. Many of them have sent home for steamer rugs and extra wraps, and the school has had heavy blanket bags made to wrap around them when real cold weather sets in. Plans are being made to have two sides of this porch enclosed with adjustable glass windows for cold and stormy weather. The idea is to see how many of the twenty-five can remain out all winter and what the effect will be. We feel with Dr. Evans that "too much air is just air enough," and that the experiment will be a most interesting study.

I would not wish to imply that these twenty-five girls are sickly or have any real trouble of any kind, for we have no invalids at Westtown; quite the contrary; we are considered a healthy crowd.

The school rooms have always been heated and ventilated by the best up-to-date methods, those scientific methods which are so beautiful in theory, but which produce a dry and overheated atmosphere in spite of all good intentions. This fall, among other improvements, we have had directions that the real genuine fresh air direct from the outside is to be allowed to enter by opening the windows at frequent intervals. The class rooms are all aired before the opening of school, and the starting temperature for the day is not below 63 degrees nor above 67 degrees. The feeling seems to be growing that people are apt to live too warm during the winter months and thereby cultivate sensitiveness.

While appreciating that Westtown, with its comparatively small number, its rare environment and equipment, may be no guide for secondary schools in general, yet I do believe the possibility, to experiment for the good health of our children, is far greater than we may first realize, and that it is quite worth our while to be fully awake and to see if Hygiene cannot be made more vital and practical in our schools.

We teachers of Physical Education must have a truly broad outlook, and train the children under our care, in forming those habits which will give power by which to live more completely. In other words, to help them to acquire that physical efficiency, which is ability to do easily and happily whatever they have to do in the every day of life.

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—Your publication is the fairest, squarest, and most intelligent and practical exponent of physical training and although I am not now active as a teacher, I assure you I would not be without a copy regularly of "Mind and Body." I have all volumes since it was established and I want more.

Yours truly LOUIS LEYERZAPF.

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NOTES AND COMMENTS.

—THE YEAR 1911 brings with it a number of great anniversaries for those interested in physical training. In our last issue we called attention to the hundredth anniversary of the opening of the first open air gymnasium and play field at the Hasenheide, Berlin, under Jahn. Today we wish to remind our readers that in July it will be one hundred and twenty-five years since, in 1875, *Johann Christoph Friedrich GutsMuths* began his notable career as teacher at Schnepfenthal. Dr. F. E. Leonard has written an original article on GutsMuths which we print in this issue and to which especial attention is called. GutsMuths was an ideal teacher who from the very beginning understood the intimate relation between mind and body, how one affected the other. He also fully understood the mental and moral value of play. His plea for the use of games to regenerate a nation physically and mentally would please our most enthusiastic modern play advocates. Yes, even the manufacturers of our modern frames from which we hang ropes, poles, ladders, swings, etc., would be astonished to find that GutsMuths used such frames in his playground.

The North American Turnerbund at its national convention last June adopted a resolution advising its societies to celebrate the anniversaries of GutsMuths and Jahn by appropriate festivities. We propose that all schools, associations, playgrounds, etc., do likewise, and that next May or June every city has its celebration in honor of these two men who did so much to place our physical training upon a sound basis. If we show the world that long ago such exercises as running, jumping, climbing, vaulting, throwing, exercises upon fixed apparatus, and all sorts of games were consciously used by great teachers as the best means not merely for physical development, but also for mental and moral ends, we shall greatly help our cause. Now is the time to prepare for a

Field Day
In Grateful Remembrance of
GutsMuths (1785) and Jahn (1811).

—INTEREST IN OUTDOOR LIFE is increasing. What is needed to get more pupils to join in the movement are accurate accounts of short and long trips: How they were organized and conducted; how much the trips cost; how camps should be arranged and managed; what the expense is of fitting up and conducting a camp, etc. It is our intention to publish a series of articles in MIND AND BODY covering those points. The first article appears in this issue. Contributions by our readers will be received with thanks.

PLAY AND PLAYGROUNDS.

GOAL BALL.

AN OLD GAME IN A NEW WAY.

By GEORGE B. MULLISON, Philadelphia, Pa.

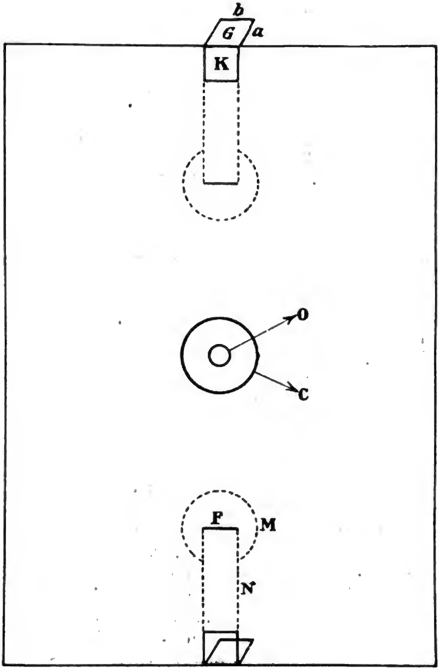
The interest a child displays in a game is in direct proportion to the skill which may be required; that is, the more difficult the game the greater the interest.

A game should supply a physiological need. It should supply exercise that will develop the musculature, that will co-ordinate the system of muscles with the higher senses and that will bring in use to the greatest degree the precentral motor area of the cortex; in a word, it necessitates what will develop the neuro-muscular activity of the organism and correlate this with the governing centers of the brain.

All of our popular national games have these characteristics. Baseball, basketball, tennis, handball, football, etc., require the exercise of the muscles, the co-ordination of the muscle system and the exercise of the special senses. There is a tremendous expenditure of nervous energy. The arms, legs, body, eyes and ears must all be used, all must work harmoniously, and all must be co-ordinated by the control of the higher centers.

Rarely is a new game invented. It may be new to you or it may simulate some game that you know, but it has undoubtedly been played somewhere even though in a modified form. Goal ball is in the evolutionary stage in the Philadelphia public schools, and much remains to be learned. It is a combination of basketball and soccer. It is especially adaptable to school yards and to cold weather with the additional advantage that it may be played with large or small numbers with the same degree of interest.

Little is required in the way of lines. The absolutely necessary ones are the goals and goal-keeper's space—described hereafter—while the others only facilitate the duties of the referee. Two posts (or perpendicular lines on a fence will answer) are placed six feet apart and six feet high at each end of the playing space (Diagram, *a*). A rope or bar is placed across the top of these posts (Diagram, *b*). This constitutes the goal (*G*). With the



Field of Play 6000 to 30000 square feet.

line connecting the base of these posts as a base line, a square is marked out towards the middle of the field, which necessarily must be six feet square. This constitutes the goal-keeper's space (*K*). A circle, eighteen inches in diameter, is placed in the middle of the field (*O*) and another concentric to this with a diameter of twenty feet (20 ft.) (*C*). A line six feet long is placed parallel to near edge of goal-keeper's space and fifteen feet away as a free throw line (*F*). From the center of this line a circle twenty feet in diameter is marked (*M*) and an alley-way laid out from the free throw line to the near edge of goal keeper's space (*N*).

(All of these twenty-foot circles and alley-way are not necessary except in regulation of games.)

The playing space may be any size or shape. It is immaterial whether it is 6,000 square feet or 10,000 square yards, only the smaller the space the less should be the number of players.

The players are divided into equal sides. A dodgeball or basketball is placed in the small central circle. One player from each side, with no other players nearer than ten feet, stamp with one foot toeing the 18-inch circle and at a given signal seize the ball. The ball is advanced toward the goal by passing, a score being made when it is thrown between the goalposts and under the crosspiece. There should be two halves with a change of goals.

The following rules are suggested, though they may have to be changed with the evolution of the game.

(1) There shall be one goal-keeper for each side, who is the only one who may enter the goal-keeper's space, though he is not compelled to stay there. If any one of those defending the goal except the goal-keeper shall enter this space, the ball shall be given to the other side, five yards away, for a free throw. If any part of the body of one of the aggressive team enters this space, the goal, if made, shall not count and the goal-keeper shall throw the ball out with no one nearer than 10 feet.

(2) Running with or advancing the ball by oneself is prohibited and in such case the ball shall be given to a player of the opposite side with no one nearer than 10 feet.

(3) Kicking the ball, holding, tripping, pushing and any unnecessary roughness shall be penalized in the same way as advancing with the ball (See 2).

(4) A free throw consists of a trial for a goal, at a distance of five yards from the near edge of the goal-keeper's space, with no one nearer than 10 feet and no one in the alley-way between the goal-keeper and the one making the throw.

(5) There are no out of bounds, and the play shall only be stopped as in above mentioned cases and after scoring, in which case it shall be put in play at the center.

(6) One official is all that is necessary in a small field, though two may be an advantage when a large field is to be covered.

Geo. B. Mullison.

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—*"Can You Take a Raw Egg?"* "Never," you shudder. But you can, and it is an accomplishment that everyone should have, for eggs taken raw are invaluable at times. Several years ago, when the idea was first introduced, it seemed barbarous to many people, like eating raw meat, and only a step from cannibalism. But the athletes and the invalids together blazed the way, until there are now hundreds of persons who eat their eggs that way from preference. Certainly there is no doubt that they are better so, as coagulated albumen, which is the white of the egg cooked hard, is one of the most difficult things the human stomach is ever called upon to digest. If the egg is broken whole into a small wine glass and a few drops of fresh lemon juice squeezed over it, it may be swallowed as easily as a raw oyster. Try not to break the yolk in the mouth, because it is this which has the unpleasant flavor. If the egg is thrown into the mouth so that it strikes the base of the tongue, it will go down of its own accord. Never take the egg into the front part of the mouth, as it is almost certain to break in getting itself swallowed.—"The Fresh Air Magazine," Philadelphia.

BOSTON'S MUNICIPAL GYMNASIUMS.

By Everett B. Mero.

Although Boston has municipal indoor gymnasiums not duplicated in number or efficiency by any in the world, comparatively few citizens appreciate this fact. Six institutions are now devoted exclusively to physical welfare; and soon two model new buildings will be added—at East Boston in January to mark the birthplace of the municipal gymnasium idea in America, and at Jamaica Plain next June, when a former structure will have been rebuilt. Two others are planned but not started—one on Blossom street in the West End and one in Charlestown. For the latter, money has been provided but work is delayed. A new gymnasium is also planned for Ward 15 in South Boston.

No other city can offer a list of such length or show service so great as centers about the Boston free public gymnasiums, unless Chicago be the exception. That city has more of such gymnasiums than Boston is likely to have for many years, and the recreation system of which they are vitally important parts, produce greater returns than the gymnasium of Boston can hope to equal under present arrangements, even if the number were the same.

The difference is one of fundamental policy which rests upon the conception of what is proper recreation service by a city. Shall it be through several unrelated agencies following various policies, some good and some bad, as in Boston? Or shall it be through systematic arrangement of gymnasiums, playgrounds, dancing halls, athletic fields, swimming facilities, means for social welfare and civic education, all under intelligent supervision that springs from a central administration, which is the method favored in Chicago and in other progressive cities?

So far as the gymnasiums go there is no room to question their value. They give ample returns for every dollar spent on them. The individual use of the gymnasiums and baths is probably more than the use of all the 25 to 30 playgrounds of the city in which supervision is given or attempted. The baths are a feature of the municipal gymnasiums having separate importance in the scheme of public welfare provisions. As a matter of fact, a number of the gymnasiums are more often referred to, officially at least, as baths than as gymnasiums. Both work together.

The service is operated under careful supervision, local and general. The city has not created these recreation centers and left them to run themselves, as has been the too frequent policy with playgrounds. Erratic administration "higher up" has been the main trouble in this department.

Medical supervision is an important feature from a hygienic point of view. This has been developed to a state where all applicants for use of the various gymnasiums are provided with medical examination and advice on methods of right living for efficiency. This part of the work has been developed by Dr. William R. Woodbury and staff, until not even the Chicago recreation centers nor any others can show anything like the same personal oversight and provision for the well being of individuals.

Civil service instruction and practice is another important part of the work of the public gymnasiums. Many of the policemen and firemen going into these departments of city service pass through the public gymnasiums.

The improvement in physique of applicants for these positions since this system has been in efficient operation has been very marked.

The gymnasiums also serve as preliminary training schools for volunteer leaders, who devote time and energy to the service of the city and their fellow men while getting personal benefit and pleasure, with a hope of some day becoming paid instructors in the gymnasiums.

It is worth while mentioning that the men, women and children who make use of the city's gymnasiums, who "wiggle their arms and legs about" and use the various apparatus that make possible all-round development for personal welfare and good health, do so because they like to. It is just as much play for them, it gives them just as much pleasure, as if they were playing games in a playground. If this were not so, why should the youngster and the grown-ups keep using the gymnasiums? They don't have to. Everything is run, in a sense, on a "do as you like" principle. All citizens who comply with the few necessary rules are free to use the gymnasiums as desired, and they do so practically to the limit of capacity. If one of the early parts of the general plan, of which only a little has been carried out, ever becomes possible, there will be a gymnasium run by the city in each ward, which will be not only a place for physical exercise and cleanliness, but also a neighborhood social center.

The municipal gymnasium and baths are conducted by the Bath Department. The department also has charge of bathing beaches and floating baths in summer. The total attendance at all these institutions is over 2,000,000 a year. The present head of the department is Richard M. Walsh. Hugh C. McGrath is general superintendent. The trustees, serving without pay, are Francis M. Carroll, Mrs. Agnes C. Bulger, James W. McLaughlin and Chairman Walsh.

Some of the good points in the doings of the department are thus indicated by one of the gymnasium directors, Henry A. Higgins:

"In view of the haphazard manner in which the department has been developed, one may well marvel at the well-ordered methods and system with which it cares for the physical education and recreation of men, women and children. One beach, for instance, on a hot day, accommodates more people than may be seen on all the playgrounds of the entire city.

"All the beaches, together with floating bath houses, are open for use during the entire summer season and hundreds of thousands of the city's population derive from use of them all the advantages of bodily exercise, personal cleanliness and wholesome recreation. Instructors give free instruction. It is undoubtedly due to this fact that few cities in the world can point to as many children who can swim as are found in the city of Boston. Hundreds of children have been taught not only to swim, but have been coached in the methods of rendering aid to others.

"The three summer months suffice to reap all these advantages. But during the entire year the indoor baths and gymnasiums are doing their noble work. The system has become so elaborate that practically all the big residential districts are provided for.

"All these agencies are centers from which health and cleanliness radiate every day in the year. In them thousands bathe and take some form of regular, systematic physical exercise. There are hours specially set aside for men, women and children, and all have their organized classes. Two days are for men, two for women and girls and two for boys. General public bathing and gymnastic classes are conducted simultaneously.

"The most successful of all these places, from the viewpoint of attendance, is the Columbia Road gymnasium and baths. Here four classes a week for women have an aggregate attendance of 800. There are two classes of men, 250 each, and four classes of children aggregating close to 1,000. In addition to this there is the bathing attendance in the shower baths and the swimming tank.

"The D Street Gymnasium, South Boston, in point of attendance, comes close to Columbia Road, with Cabot Street Gymnasium and that of North Bennet Street closely following. At the two South End gymnasiums the classes are smaller because these buildings are small, old and out-dated and cannot accommodate the people who apply.

"In point of high bathing attendance, the North Bennet Street Gymnasium easily leads. This building is located in the thickly settled section of the North End, where little or no bathing facilities exist in the homes. From 300 to 1,200 people bathe here every day. The house has a record of having handled 1,800 in one day. The Dover street bath house, which has no gymnasium, ranks next to the North Bennet Street building. This house, too, is located in a thickly settled section of the city where bath tubs are scarce. Sixteen hundred persons are said to have bathed there in one day."

THE OBLIGATORY EXERCISES ON THE HORSE FOR GERMAN GYMNASTIC FESTIVALS FROM 1880 TO 1908.

Translated by Carl O. Hierholzer, Military Institute, Bordentown, N.J.*

FRANKFURT.

1. From the side-stand frontways, straddle vault to a balance-rest (fig. 46) holding the legs forward horizontally, squat backward to the front-rest, feint and make one whole circle left with the left leg, feint left with both legs and double rear vault to a cross-stand.

2. Long Horse. Giant leap (Fig. 52). Keep the legs together as long as possible. Height of horse 150 centimeters, distance of the beat-board from the horse, 1 meter.

DRESDEN.

1. Run and jump to a free rest frontways on the pommels, hold it as a lever from 4 to 5 seconds, slowly squat through forward to the balance-rest (Fig. 46), holding the legs forward horizontally, lower the legs to the rest rearways and circle the left leg left, then the right leg right, then circle both legs right and jump off to a sidestand rearways.

2. Long Horse. Giant Leap (Fig. 52). Place the hands on the neck of the horse in making the leap. Keep the legs together as long as possible. Height of horse, 130 centimeters. Distance of the beat-board from the horse, 1 meter.

MUNICH.

1. Feint with the left leg, feint right with both legs, circle both legs

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* Translators Note. In order to make these figures used more easily understood, the reader is referred to the "Code Book of Gymnastic Exercises," by L. Puritz. Figures occurring in the translation refer to the illustrations in that book.

right to a rest frontways, one half right circle with the left leg and scissors right sideward and then left sideward to a balance rest over the left pommel, left hand between the legs and the legs held horizontally, circle backward the left leg and rear vault left to a cross-stand.

2. Long Horse. Giant Leap (Fig. 52), but with the hands placed on the croup; a cone-shaped felt hat .40 meter high shall be placed in the saddle. Height of horse 130 centimeters. Distance of the beat-board from the horse, 1 meter.

BRUSSELS.

1. Flank vault swing left to the rest rearways, circle the right leg right and then flank vault swing right to the rest frontways, one half circle right with the left leg and scissors right and left, one half circle backward with the left leg then a rear vault passing over the croup and neck to a cross-stand.

2. Long Horse. Squat Vault. Height of horse, 130 centimeters. Distance of the beat-board from the horse, 1 meter.

HAMBURG.

1. From the rest frontways, half circle right with the left leg, one half circle left with the right leg to the rest rearways, flank vault swing left to the rest frontways, one half circle left with the right leg, raise the left leg over the neck to a balance rest over the left pommel, legs held horizontally, circle the right leg backward over the croup, continue the swing over the neck to a feint left with both legs, swing both legs backward and make one flank vault circle to the rest frontways, one half circle left with the right leg and scissors left, one half circle left with the right leg over the croup to the balance rest on the right pommel. Circle backward with the left leg and rear vault left over the croup to a cross-stand.

2. Long Horse. Giant Leap with a half turn on the long axis of the body. (Giant straddle vault with a half turn.)

NÜRNBERG.

1. From the rest frontways, feint left, circle the left leg left, then feint right with both legs, circle both legs right to the rest frontways, one-half circle right with the left leg and scissors right and left, one-half circle right with the left leg, then feint with both legs and circle both legs left to the rest frontways, the needle right with a three-quarter turn left to the riding seat in the saddle (Fig. 50); reverse (under) grasp on the rear pommel and lever on both elbows, dismount to a cross-stand at the end of the horse by rolling over forward resting the right shoulder on the croup.

2. Long Horse. Giant Leap. Placing the hands on the neck of the horse. Height of horse, 1.50 meter. Distance of the beat-board from the horse, 1 meter.

FRANKFORT.

1. With a run, jump to a free rest frontways; squat through forward to a balance rest, legs held horizontally, squat through backward swinging the legs and body up high, lower to the rest frontways; feint with the right leg, circle the right leg right to the rest frontways, then circle both legs right; feint left with both legs and circle both legs left followed immediately by a rear vault passing over the croup and neck. (The right hand rests in the neck.)

2. Long Horse. Giant Leap. Keep the back straight, the legs straight

and held together. Place the hands on the neck of the horse. Between the beat-board and the horse a buck should be placed crosswise and touching the horse. Height of the apparatus, 1.35 meters; distance of the board from the horse, 1.30 meters.

FIELD DAY OF THE ST. LOUIS PUBLIC SCHOOLS.

Saturday, May 21st, 1910.

Indian Club Exercises for Pupils of Grades VII ano VIII.

Music:—March, ¾ Time.

An introduction of 8 beats will precede the exercises and an interlude of 16 beats will be played between the parts, during which the pupils remain in the starting position.

PART ONE.

First Exercise.

a) Raise clubs sideward obliquely downward, march forward three steps and close heels at four	1-4
b) Raise clubs sideward obliquely upward, mark time and face left about	5-8
c) as a), and d) as b), at 16 clubs are lowered	9-16
e) to h) Repeat a)–d) facing right about	17-32

Second Exercise.

a) Raise clubs horizontally forward and stride left forward	1-2
b) Swing clubs down and backward on right side, turn trunk right and bend left knee	3-4
c) and d), Return movements	5-8
e)–h) Repeat to right	9-16
i) Raise left club horizontally forward	17-18
k) Swing a complete straight arm circle forward twice	19-22
l) Lower club and pause	23-24
m)–n)–o) Repeat with right	25-32

Third Exercise.

a) Raise clubs horizontally sideward and stride left sideward	1-2
b) Bend arms, left over head, right across back, clubs horizontal, turn head left and bend left knee	3-4
c) and d) Return movements	5-8
e) and h) Repeat opposite	9-16
i) Raise left club horizontally sideward	17-18
k) Swing a complete straight arm circle outward twice	19-22
l) Lower club and pause	23-24
m) and o) Repeat with right	25-32

Fourth Exercise.

a) Raise clubs backward and stride left backward	1-2
b). Raise clubs side-upward, cross them at neck of clubs over head and kneel left	3-4
c) and d) Return movements	5-8
e) and h) Repeat with stride and knee bend right	9-16
i) Raise left club backward up	17-18
k) Swing a complete straight arm circle backward twice	19-22
l) Lower club backward and pause	23-24
m) and o) Repeat with right	25-32

4x32=128 Beats.

PART TWO.

First Exercise.

a) Raise clubs sideward, arms straight, march forward three steps and close at four	1-4
b) Cross clubs over head at the neck of clubs, mark time and face left about	5-8

c) as a) and d) as b), at 16 clubs lowered	9-16
e) and h) Repeat a)–d) facing right about	17-32

SECOND EXERCISE.

a) Raise clubs horizontally forward and lunge left forward	1-2
b) Swing clubs backward on right side and lower trunk forward	3-4
c) and d) Return movements	5-8
e)–h) Repeat to right. At 16 raise clubs to starting position	9-16
i) Arm circle, hand circle, arm circle forward left and return to starting position	17-20
k) the same as i) with right	21-24
l) and m) swing both clubs with arm circle on side of body and hand circle in front left and right	25-32

(At 32 lower clubs.)

THIRD EXERCISE.

a) Raise clubs horizontally sideward and lunge left sideward	1-2
b) Bend trunk left sideward	3-4
c) and d) Return movements	5-8
e) and h) Repeat to right. At 16 raise clubs to starting position	9-16
i) Arm circle, hand circle, arm circle sideward left and return to starting position	17-20
k) the same as i) with right	21-24
l) the same as i) and k) swing both clubs outward twice	25-32

(At 32 lower clubs.)

FOURTH EXERCISE.

a) Raise clubs backward and lunge left backward	1-2
b) Swing clubs forward up and bend trunk backward	3-4
c) and d) Return movements	5-8
e) and h) Repeat lunge backward right. At 16 raise clubs to starting position	9-16
i) ¾ arm circle left backward to forward position; hand circle backward and arm circle backward to starting position	17-20
k) the same as i) with right	21-24
l) the same as i) and k) with both clubs	25-32

PART THREE.

FIRST EXERCISE.

During the interclude of 16 counts the ends of the clubs are placed under arms at 9.

a) Raise left leg forward; hop right 1—cut step left 2—raise right leg forward and cut step right	3-4
b) Two step left forward; 5–6, step right forward and turn left about	5-8
c) and d) Repeat a) and b)	9-16
e) and h) Repeat a) and d) starting with right and turning right about.	17-32

(At 32 raise clubs to starting position.)

SECOND EXERCISE.

a) Swing clubs backward and lower trunk forward	1-2
b) Swing clubs forward up and bend trunk backward	3-4
c) the same as a). d) straighten trunk and raise clubs to starting position.	5-8
e) and h) Repeat a) and d)	9-16
i) ¾ double arm circle forward on left side turning trunk left and return 1 double hand circle forward outward with bending arms 2—and arm circle forward to starting position 3–4	17-20
k) the same as i) right	21-24
l) and m) Repeat i) and k)	25-32

THIRD EXERCISE.

a) ¾ double arm circle left sideward, left arm in rear and bend trunk left.	1-2
b) Swing clubs left sideward obliquely upward and bend trunk to right.	3-4
c) and d) Return movements	5-8
e) and h) Repeat a) and d) starting to right	9-16
i) ¾ double arm circle inward to side position. 1—tilt clubs on straight arms; 2—Double hand circle outward behind arms	17-18

3—Double arm circle downward to side position with arms crossed in front	19-20
k) l)-m) same as i) last time return clubs to starting position	21-32

FOURTH EXERCISE.

a) Double arm circle backward to position upward and bend trunk backward	1-2
b) Swing clubs forward down and backward lowering trunk forward	3-4
c) and d) Return movement (return clubs backward to starting position.	5-8
e) and h) Repeat a) and d)	9-16
i) Double arm circle outward to the upward position twice	17-20
k) Double arm circle combined with double hand circle outward	21-22
l) Double arm circle outward to starting position	23-24
m) Repeat i)-k)-l)	25-32

With the last count place right club on shoulder and lower the left close ranks and march off the field.

The New Haven Normal School of Gymnastics.

OUTDOOR ATHLETICS.

The New Haven Normal School of Gymnastics entered on September 14th, the twenty-fifth year of its existence with a good sized enrollment of pupils.

The first four weeks of our fall term were as usual, spent in outdoor sports and athletics at our fields at Silver Sands, where a three period schedule alternating hockey, baseball, soccer, tennis, boating and swimming was carried on by four divisions, daily.

One most interesting feature of this outdoor season, were the long rows of our navy, which has been enlarged to consist now of two canoes, two round bottomed and two flat bottomed boats, up and down the Connecticut coast. Often one division rowed one way and walked back while another walked to the place of destination and rowed back.

CAMPING.

This year a new and enjoyable place was tried in connection with this outdoor work and proved a success. This was camping. Tents, cots, and cooking utensils were added to our possessions, the Senior class was divided into three sections and each section camped for a week at the shore. This camping is a benefit in several ways besides the great pleasure of the free healthy life and we are hoping that soon not only Seniors but the whole school will camp during our Spring and Fall terms.

The athletic season closed with our interclass games which were played on the last three days, the hockey in a pouring rain. These resulted as follows: Hockey: Seniors 0, Juniors 1.—Baseball: Seniors 23, Juniors 13.—Soccer: Seniors 0, Juniors 1.

WALKING.

We continued our outdoor pleasures after the beginning of indoor work by walking. So far we have taken four walks of 9—13 miles each. One, most delightful, was by moonlight on October 18th, to East Rock and from there to the shore where we took a plunge at 11 o'clock in a high roaring surf. We walked back as far as the car line and from there rode home, arriving at 12. Breakfast was late the next morning and our schedule began at 10.30 instead of the usual hour, 8.30.

Our last walk was a jolly one on December 13th, through snow banks to the top of West Rock. It was an ideal day, cold but bright and the tramp of seven miles was completed in two hours and a half.

Now the time has come for ice, our outdoor exercise during these winter months will be skating whenever the weather is favorable.

—*Value of Lying Down.* Nature takes the time when one is lying down to give the heart a rest, and that organ consequently makes ten strokes less a minute than when one is in an upright posture. Multiplying that by 60 minutes gives 600 strokes. Therefore in eight hours spent in lying down the heart is saved nearly 5000 strokes, and as the heart pumps six ounces of blood with each stroke, it lifts 30,000 ounces less of blood in a night of eight hours in bed than when one is in an upright position. As the blood flows so much more slowly through the veins while one is lying down, extra coverings must then supply the warmth usually furnished by circulation.—"The Fresh Air Magazine," Philadelphia.

EXCUSES FROM GYMNASTICS IN THE PHILADELPHIA PUBLIC SCHOOLS.

By D. M. Ferd. Krogh, M. D., Philadelphia, Pa.

According to the physicians advices before me, the total number of excuses from gymnastics during the past year were only 32 against 56 last year. Of this number 8 were excused temporarily and 24 permanently. 25 of the excuses asked for excuses from all forms of physical exercises while 7 pupils were allowed some mild forms especially free exercises.

The following tabulation shows the number excused in each grade, and the number enrolled.

Grade	Average No. Enrolled.	No. Excused.
1.	31536	3
2.	27528	3
3.	26236	8
4.	22541	4
5.	18712	5
6.	14137	5
7.	9434	2
8.	6222	2
	156346	32

The number excused amounts to only 0.020% of the total average number enrolled. Last year the percentage amounted to 0.036% or comparatively 1⅘ times as many.

The following tabulation shows the order of excuses by grade in comparison to the percentage.

6th	grade	1.
8th	"	2.
3rd	"	3.
5th	"	4.
7th	"	5.
4th	"	6.
2nd	"	7.
1st	"	8.

The causes for the excuses varied somewhat from those given last year. The causes given were the following:

TABLE OF EXCUSES.

PHYSICAL CAUSE FOR EXCUSE.	Total excuse.	Partial excuse	Temporary excuse.	Permanent excuse.	Total
Appendicitis	3	–	1	1	3
Bronchitis-chronic	1	–	–	1	1
Chorea (St. Vitus Dance)	2	1	1	2	3
Croup-spasmodic	–	1	1	–	1
Deformity and Malformation of Joints	1	–	–	1	1
Fracture of Arm	1	–	1	–	1
Heart Disease	7	2	2	7	9
Hernia-femoral rupture	–	1	–	1	1
Hip Joint Disease	1	1	–	2	2
Incontinence	–	1	–	1	1
Injury to Hip	1	–	1	–	1
Paralysis-infantile	3	–	–	3	3
Pott's Disease (tuberculosis of spine)	3	–	–	3	3
Rheumatism	1	–	1	–	1
Weakness	1	–	–	1	1
Total	25	7	8	24	32

In conclusion I must state that the cards for excuses used this year have been more thoroughly filled out than the sheets were which we used last year. They are more complete and specific.

Sample of Card used.

BOARD OF PUBLIC EDUCATION. OFFICE OF THE SUPERINTENDENT.
Physical Education, Room 694 City Hall.
PHYSICIAN'S CERTIFICATE. EXCUSE FROM GYMNASTICS.

Teachers may temporarily excuse pupils from Gymnastics. Excuses for more than a few days, as well as permanent excuses will be given by this office only upon approval of the physician's certificate. Principals will always be notified of the disposition of such cases.

Philadelphia, ...191...........
Name of Pupil...Age.................Grade.................
Name of School and Teacher..
(Above data is to be filled out by the Principal or Teacher)

Office { Permanent excuse accepted.................Principal notified.........................
Records { Temporary excuse. Keep track of this case and report later.
Signed.. Date.................................191...........

(REVERSE SIDE.)

TO BE FILLED IN BY THE EXAMINING PHYSICIAN.

Date..
It is advisable that (name)..
be excused temporarily permanently from the forms of physical training marked with a cross (X.) Running ( ), Jumping ( ), Free Exercises ( ), Apparatus Work ( ), Gymnastic Games ( ).
Please give short diagnosis; constitutional or organic defects.
....
....
....
If temporary, how long, approximately, should this excuse be valid?.....................
Signed.. M. D. Address...

EXAMINATION FOR TEACHER OF GYMNASTICS,

Newark, New Jersey, January 14th, 1911.

An examination of candidates for the position of teacher of gymnastics in the public schools of this city will be held at the Hamburg Place school building, Hamburg Place near Ferry Street, on Saturday, January 14th, 1911, beginning at nine a. m.

The written examination will include the following subjects:

1. General principles of anatomy, physiology and hygiene.
2. Theory and practice of physical training.

Candidates who have been graduated from a professional training school in physical training, whose professional course covers a period of not less than two years, may be exempted from the written examination, provided, such candidates hold also a diploma from an approved four years' high school course, or present evidence of scholarship equivalent to that covered by such a diploma.

Important. Only candidates possessing a diploma from an approved four years' high school course, or candidates presenting evidence of academic training equivalent to that covered by such a diploma, shall be considered eligible to take the examination.

An oral examination will be given at the same and place.

The examination will be open to men and women.

The salary schedule for the position of teacher of physical training is:

High school head teacher,	male	$1500	to	$2500	per annum.
" " " "	female	1200	to	1800	" "
" " assistant,	male	1200	to	2000	" "
" " "	female	900	to	1500	" "
Grammar school teacher,	male	1000	to	1700	" "

Candidates will be rated upon the following basis: Written examination, 50 per cent; oral examination (experience 25 per cent, fitness 25 per cent) 50 per cent; total 100 per cent. A rating of not less than 37½ per cent in each of the examinations is required.

Candidates who wish to take this examination should communicate at once with E. K. Sexton, Secretary of the Board of Examiners, City Hall. Blanks on which to make formal application can be had upon request.

A. B. Poland, City Superintendent.

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

—*Pittsburg University* is to have a new Stadium and an athletic field. The field is to be laid out, the Stadium built and presented to the university in time for use at the opening of the university next fall. No specified amount is fixed but it is said that the gift will amount to several hundred thousand dollars. The gift is made by J. C. Trees, an alumnus of the university.

—*At the annual meeting* of the Amateur Athletic Union the following officers were unanimously elected: President, Everett C. Brown, Chicago A. A.; Secretary-Treasurer, James E. Sullivan, New York; Vice Presidents, A. J. Lill, Jr., Boston; J. J. O'Connor, St. Louis; T. Morris Dunne, Portland, Ore.; George F. Pawling, Philadelphia.

Cleveland, Ohio, has asked for the privilege of holding the Olympic Games in 1916 within its limits. Judging by the enthusiasm with which this request was received it seems certain that Cleveland will be selected.

—The following records were accepted by the A. A. U.:

RUNNING RECORDS.

Sixty Yards, Indoor—06 2-5, W. J. Keating, Albany, N. Y., Feb. 8, 1910; 06 2-5, R. Cloughen, New York City, Jan. 28, 1910.

Ninety Yards, Indoor—09 2-5; E. A. Frey, New York City, May 2, 1910.

One Hundred and Twenty-five Yards—12 2-5, F. Ramsdell, Celtic Park, New York, May 30, 1910.

One Hundred and Ten Yards—10 4-5, R. Cloughen, Celtic Park, New York, Sept. 5, 1910.

Seventy Yards, Indoor—07 1-5, J. J. Archer, New York City, Feb. 5, 1910; R. Cloughen, New York City, Feb. 5, 1910.

Two Hundred and Twenty Yards—21 1-5, R. C. Craig, Philadelphia, Pa., May 28, 1910.

Five Hundred Yards—57 3-5, M. W. Sheppard, Aug. 14, 1910.

Five Hundred and Fifty Yards—1:04, M. W. Sheppard, August 14, 1910.

Five Hundred and Fifty Yards—1:05, M. W. Sheppard, June 27, 1910.

Six Hundred Yards—1:10 4-5, M. W. Sheppard, Aug. 14, 1910.

Six Hundred and Sixty Yards—1:21 2-5, M. W. Sheppard, May 30, 1910.

Seven Hundred Yards—1:26 4-5, M. W. Sheppard, May 30, 1910, all made at Celtic Park.

Eight Hundred Yards—1:43 3-5; M. W. Sheppard, Poughkeepsie, N Y., Aug. 23, 1910. Race track.

Nine Hundred Yards—1:57 1-5, M. W. Sheppard, Aug. 7, 1910.

Two-thirds Mile—2:45 2-5, M. W. Sheppard, July 31, 1910.

1,000 Yards—2:12 2-5, M. M. Sheppard, July 17, 1910, all made at Celtic Park.

Two-thirds Mile—2:44 2-5, M. W. Sheppard, race track, Newark, N. J., Aug. 20, 1910.

Two and One-half Miles, Indoor—12:08 1-5; Jan. 29, 1910.

Three Miles, Indoor—14:29 2-5; Jan. 29, 1910.

One and Three-quarters Miles, Indoor—8:10 3-5; Feb. 26, 1910.

Two Miles, Indoor—9:14 1-5, George V. Bonhag, Feb. 26, 1910, all made at Buffalo.

Two Miles—9:26 3-5, T. S. Berna, Ithaca, N. Y., May 7, 1910.

Four Miles, Indoor—19:39 4-5, George V. Bonhag, New York City, Feb. 5, 1910.

Four Miles—20:11. Four and One-Half Miles—22:43 1-5. Five Miles—25:09 1-5, George V. Bonhag; all made at Travers Island, Sept. 10, 1910.

Ten and One-half Miles—58:02. Eleven Miles—1:00:56 1-5. Eleven and One-half Miles—1:03:53. Twelve Miles—1:06:50 3-5. Twelve and One-half Miles—1:09:48 4-5. Thirteen Miles—1:12:49 3-5. Thirteen and One-half Miles—1:15:51 4-5. Fourteen Miles—1:18:56 3-5. Fourteen and One-half Miles—1:22:05 4-5. Fifteen Miles—1:25:15. Fifteen and One-half Miles—1:28:33. Sixteen Miles—1:31:49. Sixteen and One-half Miles—1:35:12 3-5. Seventeen Miles—1:38:37.1-5; all made by J. F. Crowley, Celtic Park, Nov. 14, 1909.

Seventeen and One-half Miles—1:42:08. Eighteen Miles—1:45:11 4-5. Eighteen and One-half Miles—1:48:22 2-5. Eighteen Miles—1:51:41 4-5. Nineteen and One-half Miles—1:55:03. Twenty Miles—1:58:27 3-5; all made by James Clark, Celtic Park, Nov. 14, 1909.

HURDLE RACING RECORDS.

Forty Yards, Low—0:05, T. N. Richards, Lafayette, Ind., Feb. 19, 1910.

Forty Yards, Low—0:05, T. N. Richards, Lafayette, Ind., Feb. 19, 1910.

Seventy Yards, Low—0:07 2-5, J. J. Eller, New York City, Feb. 5, 1910.

Seventy-five Yards, Low—0:09 2-5, Roger Bacon, New York City, Sept. 17, 1910.

Equaled same day by Bob Eller, New York City, Sept. 17, 1910; J. J. Eller, New York City, Sept. 17, 1910.

*Four Hundred and Forty Yards, 20 Low Hurdles—1:00, C. J. Bacon, Brooklyn, N. Y., July 3, 1910.

One-fifth Mile, Low—0:43 3-5, C. J. Bacon, Celtic Park, N. Y., June 25, 1910.

JUMPING RECORDS.

Running Hop, Step, and Jump—49 ft. 7 3-8 in., D. F. Ahearne, Celtic Park, N. Y., May 30, 1910.

*Standing Hop, Step and Jump, Indoor—32 ft. 8 in., Platt Adams, Newark, N. J., Nov. 25, 1909.

VAULTING RECORDS.

Pole Vault for Height—12 feet 10 7-8 inches, Leland S. Scott, Stanford, Cal., May 27, 1910.

Pole Vault for Distance, Indoor—28 feet 2 inches, Platt Adams, Madison Square Garden, New York City, Oct. 31, 1910.

SHOT PUTTING RECORD.

42-Pound Stone With Follow—27 ft. 1-2 in., M. J. Sheridan, Celtic Park, N. Y., Nov. 28, 1909.

THROWING WEIGHTS RECORDS.

*56-Pound Weight for Height—16 ft. 6 1-4 in. M. J. McGrath, Chicago, Ill., Aug. 28, 1910.

56-Pound Weight for Height—16 ft. 6 3-16 in., Con. Walsh, Travers Island, N. Y., Sept. 24, 1910.

56-Pound Weight from Stand—33 ft. 1 in., M. J. McGrath, Travers Island, N. Y., Sept. 24, 1910.

WALKING RECORD.

*One Mile—6:29 1-5 (indoor), G. H. Goulding, Buffalo, N. Y., Feb. 26, 1910.

RELAY RACING RECORDS.

Two Thousand Four Hundred Yard Relay (Indoor)—5:06 1-5, Irish-American A. C. team (J. Bromlow, W. C. Robbins, A. R. Kiviat, H. Schaaf), New York City, Feb. 5, 1910.

Two-Mile Relay—7:53, Irish-American A. C. team (Riley, J. Bromlow, M. W. Sheppard, A. R. Kiviat), Celtic Park, N. Y., Sept. 5, 1910.

THREE-LEGGED RECORD.

Ninety Yards, Indoor—0:10 1-5, W. J. Keating and W. Slade, New York City, May 2, 1910.

DUMBBELLS.

*Pushing up one dumbbell weighing 104 pounds 18 times, with one hand, from shoulder to full arm length above the shoulder, George Tsambiras, New York City, March 19, 1910.

WALL SCALING RECORD.

One Hundred Yards, Wall Scaling—0:35 4-5, Second Division Naval Militia, C. N. G. team (A. L. Perkins, W. C. Roberts, H. L. Treat, F. Loveland, Jr., W. E. House, E. V. Hedlund, W. J. Goltra, J. C. Comstock). 25 yards run to 10-foot wall, 25 yards and return, 25 yards to and over wall, then 25 yards to finish. Hartford, Conn., Feb. 21, 1910.

JAVELIN RECORD.

Throwing the Javelin—163 ft. 1 in., B. Brodd, New Orleans, La., Oct. 15, 1910.

Hose Carriage Race, Ten-Men Team—Run 200 yards from standing start, lay 100 feet hose, break coupling, affix nozzle, and show water; 0:44, Uniontown Hose Company, No. 2 team, Hastings-on-Hudson, N. Y., Aug. 27, 1910.

*Medley Relay Race (Indoor)—7:41 2-5, All Toronto team (C. L. Watson, 220 yards; M. J. Folinsbee, 440 yards; G. M. Brock, 880 yards; J. L. Tait, 1 mile), Buffalo, N. Y., Nov. 14, 1910.

*All records marked thus are subject to further investigation.

SWIMMING RECORDS.

Fifty Yards, Bath, Two Turns—0:24 2-5, C. M. Daniels, Chicago, Ill., April 6, 1910.

One Hundred Yards, Bath, Four Turns—0:54 4-5, C. M. Daniels, Chicago, Ill., April 7, 1910.

One Hundred Meters, Bath, Four Turns—1:02 4-5, C. M. Daniels, New York City, April 15, 1910.

Two Hundred Yards, Bath, Seven Turns—2:14, C. M. Daniels, New York City, March 5, 1910.

Two Hundred and Fifty Yards, Bath, Nine Turns—2:55 3-5. Three Hundred Yards, Bath, Eleven Turns—3:35 4-5. Three Hundred Meters, Bath, Thirteen Turns—3:57 3-5. Three Hundred and Fifty Yards, Bath, Thirteen Turns—4:17, C. M. Daniels, New York City; all made March 4, 1910.

BACK STROKE.

One Hundred Yards, Bath, Three Turns—1:12. One Hundred and Fifty Yards, Bath, Five Turns, 1:56 2-5. H. J. Hebner, St. Louis, Mo.; both made April 9, 1910.

RELAY RACING.

Two Hundred Yards, Four Men, Fifty Yards Each (25 yards bath)—1:45, New York Athletic Club (George South, 0:26 2-5 C. D. Trubenbach, 0:27; N. Nerich, 0:26 2-5, and C. M. Daniels, 0:25 1-5), New York City, April 15.

Two Hundred Yards, Six Men, Fifty Yards Each (25 yards bath)—2:42 1-5, New York Athletic Club (above and L. B. Goodwin, 0:28 3-5, and J. A. Ruddy, 0:28 3-5), New York City, April 15.

Four Hundred Yards, Four Men, One Hundred Yards Each (20 yards bath)—1:00 2-5, New York Athletic Club (George South, 1:01 3-5; C. D. Trubenbach, 1:03 3-5; N. Nerich, 1:00, and C. M. Daniels, 0:55 1-5), New York City, April 11, 1910.

Five Hundred Yards, Five Men, One Hundred Yards Each (20 yards bath)—5:02 3-5, New York Athletic Club (above and L. B. Goodwin, 1:02 1-5), New York City, April 11.

—*The International Olympic Committee* has definitely decided to hold the next Olympic Games at Stockholm, Sweden, in 1912. The following branches of sport will be included: Athletics, cycling (road race), fencing, gymnastics, swimming, wrestling, horse display, lawn tennis, shooting, yachting and probably football and rowing.

The method of selecting an American team will in all probability be the same as in previous years. Try-outs will be held on the Coast, Central West, South, and in the vicinity of New York, Boston and Philadelphia.

—*At a recent meeting* of the Intercollegiate Association of Amateur Gymnasts, March 20, 1911, was set for the annual intercollegiate meet in the Yale gymnasium.

The question of how many times a member of a team could compete in the intercollegiates and also in dual meets resulted in considerable discussion. It was finally voted to recommend that a man could compete but four times in the intercollegiates and the same for the dual meets. This changes the rule for the dual meets, it formerly being possible for the men to enter as many dual meets as their college would let them.

—*The players* in the recent Harvard and Yale football game were in actual motion only a trifle more than three minutes in each of the four fifteen minute periods, according to a correspondent of the Harvard Bulletin, who held a stop watch at the game. It was also ascertained that there was an average of twenty-one minutes' actual rest in each period.

The correspondent claims that there was less than fifteen minutes of running and wrestling stretched over two hours of play, and that the game is far less exhausting than a boat race, which calls for sustained effort for more than twenty minutes.

—*That the new football* as worked out during the season just closed has made the game more interesting to players and spectators alike is the general opinion expressed by the members of most of the great teams. The great majority believes that the new rules have made the game less dangerous and all agree that it furnishes greater opportunity for headwork on the field. Capt. F. J. Daly says:

"I think the new rules put a greater premium on speed and brains than the old rules. They give a better opportunity for the individual to show himself. On the whole they are very beneficial, having accomplished the purpose of the Rules Committee to a very great extent."

BOOK REVIEW.

—TWENTY YEARS AT HULL HOUSE, by Jane Addams. 462 pages, 5½ by 8 inches. Published by The Macmillan Company, New York. Mailing price, $2.75.

This is in no sense a guide book to settlement work, or a recipe for clubs and classes. It is the life story of Jane Addams.

With that clearness and gentleness which characterize all of Miss Addams' writing, but with those stirring forces in reserve which reveal themselves in the mintage of every phrase, she has set down in one volume the story of her life, the history of Hull House, and her conception of the philosophy of social progress.

Now that all societies and schools are judged by their efficiency as social agencies in their communities, the trials and tribulations, the hopes and victories of Miss Addams will be a guide to every one interested or actively engaged in work undertaken for the welfare of the community. The book is highly recommended. To be had from Mind and Body, Herold Bldg., Milwaukee, Wis.

MIND AND BODY

Vol. 17. **FEBRUARY, 1911.** **No. 196**

EDITORIAL COMMITTEE:

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THE ATHLETIC RESEARCH SOCIETY.

The third annual meeting of this society took place in New York on Wednesday, December 28th, 1910. The executive committee met on the evening previous to discuss several reports. The following circular letters and reports give a fair idea of the magnitude of the problem and what, so far, has been done to clearify the situation. It will immediately apparent that many more typical cases must be studied in order to arrive at the solution of what amateurism is. The point brought out very forcibly by the discussions was that our present rules defining an amateur were entirely wrong. The result of the meeting was that the study of typical violations of the spirit of amateurism should continue during the coming year so that a great mass of cases could be used to arrive at definite conditions.

On October 18th, 1910, the following letter was sent to all members:

Dear Sir:—The Athletic Research Society is a voluntary organization formed for the purpose of studying athletic conditions and problems. It is composed of representatives from the various classes of institutions which have wide interest in athletics: as follows: Colleges and Universities, Normal Schools, Public Schools, Private Secondary Schools, Young Men's Christian Associations, Sunday Schools, Playgrounds, Social Settlements, Boys' Clubs, Turners, Rural Associations, Military Clubs, etc.

The Society has been organizing a committee to make such a thorough study of the amateur problem and amateur laws that its conclusions may be embodied in an authoritative report which will become the foundation for a sounder development of our national, competitive play life. The committee is composed of sub-committees—with chairman and associates, one for each class of institutional interest represented in the society; thus insuring a presentation of all the various institutional problems in amateurism, at various age periods.

In so far as possible the National Associations representing the general interests of the institutions involved in the Athletic Research Society, e. g., I. A. A. U. S. for the colleges, International Sunday School Committee for the Sunday Schools, International Committee for the Y. M. C. A., etc., have been induced to cooperate in the appointment of the committees and make the sub-committees their own. It is hoped in this manner to tie together for a cooperative effort in one powerful committee the interests of all educational and social institutions vexed with the spirit and motives in competitive play.

It is the purpose of the Athletic Research Society to have the problem studied without bias or regard to previous practices. The plan of study is for each institutional committee to work by the case method. This will involve three things. First, a descriptive statement of typical cases that occur or have occurred repeatedly in individual institutions in the committee's group, and that seem to be or are claimed to be violations of the spirit of play or tendencies to evil resulting from bad motives in play. Second: An analysis of these cases as to the real moral or educational issue involved, and the effects physically and morally on the individual or individuals involved, or on the growth of competitive play among the many, or of the social status or public respect for competitive play, etc. Third: A statement of measures that will meet the general tendencies to evil and the special cases, in the form either of technical rules or of general principles that all educators and social workers can agree upon, or of administrative policies or organizations for educational propaganda or control.

When these several studies of sub-committees representing institutional interests and problems are brought together in the committee of the whole, all the angles of interest will be clear and the common elements and the mutual problems differentiated from the special institutional problems. This will give the foundation for general constructive work.

The committee of the whole will meet with the Athletic Research Society in New York, Dec. 28th. It is hoped that substantial progress will have been made by each institutional committee by that time.

Yours sincerely,

CLARK W. HETHERINGTON, President.

This letter was followed by a second which was sent to the members of a special committee. It read as follows:

Chicago, Ill., December 3, 1910.

To Members of the Committee on the Study of Amateurism:

In a circular letter of October 18, I gave the scheme of organization and a plan for a scientific study of Amateurism. Below are additional suggestions which it is hoped will show some relationships and a method treating material.

In a scientific study of Amateurism the subject should be investigated both in its broader meaning and in its technical sense. In its broader meaning Amateurism is identical with the play spirit; in its technical meaning it is contrasted with the professional spirit.

A brief statement will show the character of study needed under both these headings.

Athletic activities as play, and therefore the play spirit, are receiving new recognition among educators and social workers. Modern studies of child nature and the relation of play to the growth and development of the child, have given play an entirely new meaning. It is now known that the vegetative powers, the nervous systems, the instincts at the root of character and the emotions that make life joyous, as well as the intellect, depend upon activity for their development, and that play is Nature's means of securing this necessary activity. Without play there can be no normal development. Furthermore, each stage of growth and development during childhood and youth has its characteristic plays and games which are related to the needs of the growing organism, mind and spirit at that stage of development. Athletics, properly speaking, i. e., plays and games formalized under strict rules of procedure for the sake of testing physical prowess and skill in obedience to the competitive impulse, arise with adolescence and the social feelings and rivalry. Athletics are essentially adolescent plays and characteristics of the needs and spirit of that age. They are the most interesting and stimulating of those activities necessary in adolescence for the continuance of organic and nervous development and they are a vital power in moral, social and spiritual development.

In contrast to these values as stated, certain evils appear in athletics. These objectionable features are the product of tendencies seen even in the plays of children that become more prominent in athletics because of their nature, i. e., the vigorous form of the activity, the social characteristics involving competition in rivalry, and the interest of spectators in the contest. The objectionable features are as follows: The tendencies 1. to physical injury through accident, 2. to over indulgence, 3. to specialization, 4. to bad manners at play and bad spirit in defeat or victory, 5. to evasion of the rules of the game, 6. to violations of the classification necessary for fairness in competition (eligibility) 7. to develop as a spectacle for the amusement of the public. The first three of these tendencies to evil reduce or destroy the physical values of play; the fourth and fifth the moral values; the sixth and seventh the social organization and the respect for athletics as an educational influence.

The tendency to become a spectacle is especially important because it tends to reduplicate and exaggerate all the other evils in proportion to its development. Human nature loves to see any fighting spectacle. This interest has produced the professional. It has produced, in so-called amateur contests that are spectacles, all the specialized and business-like methods, the "commercialism," the professionalism; the exaggeration of the managerial function and the coaching function, etc., etc. These tendencies become more prominent as boys approach maturity. It is very doubtful whether athletics can be organized with the spectator the dominating influence in the organization and the spirit of play be retained.

It is these tendencies to evil that make the "control" of athletics necessary. If athletics are to become a phase of our national play life and are to be worked into the character-forming customs of our people, we need an Athletic Platform declaring the principles and methods necessary in the administration of athletics to secure the values and avoid the evils —a platform on which all educators and social workers can join in an administrative endeavor and which can be used to educate the public concerning the meaning and needs of athletics as an educational force.

In this platform the principles of administration designed to promote and preserve the play spirit should be perhaps the chief planks.

These statements will show the relationship in the stody of Amateurism as the spirit of play, and amateurism in the sense of "motive" with reference to material gain *as an element in the classification of individuals* for fairness in competition. We need as a result of our study of amateurism, first, a declaration of those principles that are necessary in the organization and administration of athletics to preserve the spirit of play. We need, secondly, an unbiased and scientific study of the technical problems of amateurism at different ages and under different institutional conditions. The general principles above would give a classification of boys according to development and ability and the activities adapted to them. This technical study covers the results of "motive" or attitude toward material gain for participation in athletics, its effect on the development of the athlete, its effect on a classification for fairness in competition, its effect of boys and the public toward athletics, etc.

On this latter phase of the subject we need to forget that we have rules and make a scientific study of cases. This analysis of cases will determine the principles involved and the legislation necessary. Below I give two of the cases used in organizing the analytical outlines for the study of amateurism incorporated in the "Report of the Committee on an Amateur Law," I.C.A.A.U.S., Section Three, pp. 10-13.

SAMPLE CASE I.

A boy goes to a picnic, participates in a foot race and wins a cash prize. What is his status? The principle involved in this case is typical of all cases where a reward is given for participation in a particular contest. The case brings up the usual questions. What was the boy's motive? What was his age? What institutional connections did he have? Who was responsible for the cash prize being given? What effect does the act have in a system of control?

It is fair to assume from experience that with a public opinion favorable to athletics and with proper leadership, boys will participate in contests without desire for individual rewards. It is merely a matter of organizing the play incentives. Doubtless with our present unformed public opinion and our inadequate leadership, some boys would not be led to enter the contest indicated but for the prize. The medal is open to the same objection. In some places where athletics are well developed, athletes have refused to compete unless expensive medals were offered. Here the leadership has perverted the taste and motive by securing participation through material inducements rather than by an organization of the play incentives. Should not the leaders be condemned rather than the boys? Should not public opinion be roused against the giving of individual medals as well as cash prizes, especially in such manner, that the reward becomes the incentive rather than the pleasures in the contest. Except for this tendency it may be granted that the case cited in its simplest form has neither any effect on the boy nor on the development of athletics, or a system of control of motive.

The case however merges over into more difficult cases. The following questions state the problem:

Suppose for example the boy is under fifteen years of age: suppose he is between fifteen and twenty: suppose he is over twenty. Can a boy justly be held permanently responsible for acts committed previous to, say fifteen years of age? Suppose the boy has never heard there was such a thing as an amateur law. At what age and under what social conditions can he be held responsible for this knowledge? Suppose the boy is a member of a Playground or a Sunday School or a Y. M. C. A. or a High School where athletics are organized but he has never been a member of a team. Suppose he is also a member of an organized team. These questions of membership, of knowledge, and of age, each complicate the other.

It is recognized that a boy of exceptional skill at any age, who is a member of a team representing an institution may develop material motives and demand and receive a reward from partisans for participation. It is not so clear however, at what age or period of development a boy is physiologically able to develop skill enough to be of value to a promoter of contests for the amusement of the public. This should be settled and a distinction made between the two cases.

Considering the difference in age and institutional relationship, would not principles of administration along the following lines meet all the dangers?

First, throw the responsibility for adequate provisions for athletics under wholesome conditions and adequate leadership on educators and social workers, or those institutions dealing with the adolescent.

Second, frame a regulation that assumes information and responsibility after a boy becomes a competitor in open contests or a member of an organized team.

Third, frame a regulation that assumes information and responsibility after a boy becomes a candidate for a team in any organization at which time he shall be given information and be required to sign an honor pledge to maintain in his athletics pure play motives.

SAMPLE CASE 2.

Groups of boys in a certain city are in the habit of organizing themselves into base ball teams and playing games for a jackpot. They put down a hat and each player throws a coin of a stated denomination into the pot. The winning team takes the pot.

What is involved in this act, and what attitude must administrators take towards it?

What is the motive? Social workers agree that these boys do not play for the money involved. They play for the game, but they add to the legitimate emotional pleasures of the contest the powerful gambling impulses and emotions of chance in order to intensify the pleasures of the game. It is not "technical professionalism," in this case, if we consider the act from the standpoint of the principle of amateurism, the motive involved. Therefore it has nothing to do with laws of classification framed to bar boys with a money making motive from participation with or against boys with pure play motives. On the other hand the act is bad educationally; it adds an illegitimate incentive to the play incentive; it leads to the money motive in play; it developes gambling habits at the habit-fixing age. Obviously the practice must be condemned by educators and social workers and worked into a code of principles that will eliminate it. Furthermore, it must be recognized that, at a later age, gambling can be and is used in colleges and clubs as a subterfuge under which money is paid skilled athletes by partisans for participation.

A large number of such cases will give the data for legislation.

Respectfully submitted,
CLARK W. HETHERINGTON,
Chairman Ex. Com.

During the meeting on December 28th the following report of the Committee on Administration was presented:

At the annual meeting of the Athletic Research Society on December 29, 1909, a committee was appointed under the following resolution:

RESOLVED:—First—That a committee be appointed by the Executive Committee to consist of one representative for each institutional interest in athletics, represented in this Society.

Second—That each member of this Committee investigate the desires of his institutional interests as to the problem of administration and organization.

Third—That this Committee confer with the Committee appointed by the Amateur Athletic Union for the investigation of athletic conditions and that they attempt to bring about a satisfactory administrative adjustment.

The Committee was constituted as follows: George L. Meylan, M. D., Chairman; Lee F. Hammer, Secretary; Lory Prentiss, (Secondary Schools); A. E. Metzdorf, (Elementary Schools); George J. Fisher, M. D., (Y. M. C. A.'s); C. E. Hauck, (Sunday Schools and Churches); Gaylord S. White, (Social Settlements); George W. Ehler, (Playgrounds); W. P. Bowen, (Normal Schools); Capt. Robert E. Heun, (Military Organizations); William A. Stecher, (Turners); Myron T. Scudder, (Rural Organizations); Francis Tabor, (Boys' Clubs); R. Tait McKenzie, M. D., (Colleges).

After getting the acceptances of the persons nominated, and filling the necessary vacancies, several attempts were made to get a meeting of the Committee. It seemed possible only to get the members together in small groups in different parts of the country. The secretary therefore prepared an inquiry blank which was approved by the members of the Committee, and which the members sent out with a personal letter to the people in their respective groups. Each member of the Committee tabulated the replies received and sent in a statement concerning the results of the inquiry. Professor Hetherington took the accumulated material to make a summary of the entire canvass.

Several members got together at the time of the meeting of the Department of Superintendence in Indianapolis in the spring of 1910, and discussed the result of the inquiry that the Committee had carried on. A further conference on this matter was had at the time of the N. E. A. meeting in Boston in July 1910.

Following this the secretary prepared a tentative draft of a statement to be presented to the Special Committee of the Amateur Athletic Union and sent it out to members of the A. R. S. Committee for comment and revision. A meeting of the A. R. S. Committee was held in New York City on October 1, 1910, and the prepared communication to the A. A. U. Committee was further revised and prepared. The substance of this communication was that it was the sense of the Committee that

(1) The control of amateur athletics should be vested in a body composed of representatives from all the interests concerned and that such representation should be on the basis of the number of competitors registered in each group.

NOTE:—The interests of the different kinds of bodies having to do with athletics vary so greatly that it seems best that they should form separate groups although they cover the same territory. For example, on the Pacific Coast there might be the following groups: Athletic Clubs, Y. M. C. A.'s, Boys' Clubs, Universities and Colleges, Secondary Schools, Elementary Schools, Sunday Schools, Playgrounds. Each of these interests would have its representation according to *its size* in the national controlling body. They might also have a *sub-governing* body for that territory.

(2) These groups should subscribe to a *uniform definition* of amateurism and maintain an effective *system of registration.*

(3) Groups having this relation should be given authority to carry on all kinds of intergroup athletic activities without procuring sanction from, and without individual registration with the governing body—This to apply when entrance for such games are limited to registered members of the groups. In cases where outside entries are allowed, those not registered with the groups should register with the controlling body and a sanction for the games be secured.

This Committee recommends that the Amateur Athletic Union so readjust its regulations as to conform with the above suggestions.

At that meeting a Special Committee consisting of Dr. George L. Meylan, Dr. R. Tait McKenzie, Dr. George J. Fisher, Mr. Lory Prentiss, and Mr. Lee Hanmer, was appointed to confer with the Special Committee of the Amateur Athletic Union if such a conference should be desired.

On October 8, 1910, a conference with the Amateur Athletic Union Committee took place in New York City. There was a very frank discussion of the whole matter of athletic control and a good many of the specific difficulties that present themselves, particularly in connection with athletics in the schools and playgrounds, and also in small communities where there is little opportunity for inter-group competition. Dr. Fisher brought up the concrete case of a small town in which there was only one high school, two churches and one playground, and called attention to the fact that it was necessary for each of these three groups to join the Amateur Athletic Union and then be registered before they could have competitive athletics among themselves. The individuals in these groups could not understand why they should be obliged to do this and refused to comply with the requirement. Mr. Weeks of the A. A. U. Committee said that the Amateur Athletic Union would permit such groups in a small city to organize as a local league and compete among themselves without registration and sanction, requiring only that such league become a member of the District Association of the Amateur Athletic Union in whose territory they were located. He further explained that such membership would give the local group representation in the District Association to which it belonged and thus a voice in the administration and control of athletics in their section.

Toward the close of the conference Professor Hetherington stated in some detail the problems of athletics in the schools and colleges, and showed that these institutions were aiming at something different than the athletic clubs, in that the athletics were the means to an end and not an end in themselves. He called attention to the necessity of providing such activities as would enlist the active participation of the whole number of students rather than that of a selected few. The members of the A. A. U. Committee gave evidence of a keen interest in this situation, and stated that their organization would co-operate in every possible way to aid the schools and colleges, and would be glad to see some organization perfected among these educational institutions that would make possible the necessary encouragement and control of the activities.

Altogether the conference was well worth while, each group getting a better conception of the view-point of the other. It seems as though this conference may have paved the way for more effective co-operation, as it surely has resulted in a better mutual understanding.

Following this conference the A. A. U. Committee submitted a report at the annual meeting of the Amateur Athletic Union on November 21. In substance the report suggested that the A. A. U. Committee encourage the formation of groups or leagues in the various fields of athletic activities and induce such groups to join the District Associations in their respective territories. The report closed with the following paragraph:

"We hope that all those that are seeking the advancement of amateur athletics will unite with us in a campaign of education that will be constructive, and which will seek to make known the efforts that are being made to make the athletic activities of this country stand for fair play, courtesy, co-operation, wholesome recreation and health."

Your Committee feels that a decided step in advance has been secured by bringing about this better understanding through frank discussion of the problems that have developed, particularly in athletic activities of schools, playgrounds, clubs, etc.

Your Committee would recommend:

First—That steps should be taken to develop more organized co-operation among the schools, churches, playgrounds, boys' clubs, etc., in this matter of athletic administration.

Second—That each group should emphasize those athletic activities that make possible the active participation of the greatest number, as opposed to intergroup competitions for the selected few.

Third—That there should be formed local groups in the various sections of the country, which groups should join the District Association of the Amateur Athletic Union for that section and thus make possible proper control of their intergroup competitions, as well as to encourage such activities by eliminating the necessity of registration and sanction and also for the purpose of belonging to, and having representation in the body controlling athletics for their sections of the countr.y

Fourth—That the Athletic Research Society carry on a campaign of Education to the end that

(a) The social as well as the physical significance of athletics be understood

(b) Activities be developed that shall reach the greatest possible number

(c) High standards of sportsmanship and adherence to regulations be adopted by those in charge and made effective among the participants.

After the presentation of the above report the representative of each institution was called up for a report. Many of these reports were highly interesting. The discussion following also was very illuminating, showing that while each group had its own manner of managing its competitive life they all saw that there should be a commonly accepted standard of what constituted an amateur. Several speakers showed that if one's participation in competitive sport is not judged by the motive, then, there is perhaps no amateur sportsman in existance, as probably every one taking part in athletics receives some kind of a reward. This may be in the form of a medal, a prize of some value, the payment of his traveling expenses, a suit, a sweater, a dispensation from paying dues or tuition fees, etc., or perhaps in such form as social distinction. That the former scheme of recruiting promising athletes for one's school or college is again strongly in existance was shown by numerous instances.

A strong opposition showed itself against the third recommendation of the committee, i. e., that societies, schools, playgrounds, settlements, churches, etc., form local groups and join one of the districts of the Amateur Athletic Union. This recommendation will meet with opposition so long as the Union does not allow these groups a representation in the A. A. U. based on the number of registered participants. The A. A. U. so far has set itself against any scheme looking to an equitable representation. The result has been that the policy and practices in athletics are determined by people who represent the attitude of athletic clubs, that is of clubs formed specifically for athletic competition. All the other interests, be they churches, Y. M. C. A., settlements, Turners, schools, playgrounds, etc., etc., are primarily educational institutions. Competitive sport is to them merely one of the agencies to accomplish their greater ends. Because of this their methods of fostering and regulating athletics will be different from those of a body for whom athletics is an end and not merely a means. The discussion showed that there was a strong sentiment everywhere to gather educational interests that have athletic competitions into federations fashioned like the one in Cook county, Illinois, or the one in Charleston, S. C., and other places. The most encouraging part of the whole conference was the fact that everywhere thinking men are coming to the conclusion that the whole play-life of our nation, be this in form of simple play of small children or in the form of the most violent competition by organized teams, should first of all be based on educational ideals. Then, based upon this educational foundation, wise regulations should see that this play-life is also hygienic. Then, based upon these two, regulations should be adopted which will allow the greatest freedom to all who, through training and age, are fit to enter competitive sports. The Athletic Research Society invites everyone interested in its work to join its ranks. Address No. 1, Madison Ave., New York, Metropolitan Building.

INTERNATIONAL HYGIENE EXHIBITION, DRESDEN, GERMANY,

MAY TO OCTOBER 1911.

The idea of bringing before the professional world and the general public the mighty acquisitions of modern hygiene in the form of a comprehensive and universal exhibition, an idea which for years has been warmly advocated in hygienic circles, will find its realization in Dresden in the year 1911.

* * *

More than a quarter of a century has elapsed since the last general hygiene exhibition was organized in Germany. At that time hygiene was still an infant science for which as yet no chair was provided in most universities, a science in modest attire, which was considered by many as hardly complete.

What a change has taken place since then! Not only does every university of to-day possess its own hygienic department, but also in all civilized states numerous stations have been established for the science of hygiene. Grand discoveries, especially in the province of bacteriology, enable us to save thousands and thousands of human lives. Technics and industry vie with each other in all fields in the application of hygiene to practice. In many cases legislation feels compelled to observe in its measures the precepts of hygiene; and the social ideas of our century have been led by hygiene into new paths, to those imposing movements which aim to increase the pleasure of living and the working strength of mankind, and to preserve nations from dissipation.

The realm of hygiene expands from day to day. Even for the hygiene specialist it is difficult to-day to remain in close connection with the total province of hygiene. It will therefore be of service to him to see the results and acquisitions of recent investigation displayed as a well-ordered, systematic whole, in the form of an exhibition. Also physicians, technicists, and administrative officers, as well as all those who cannot devote themselves to special hygiene as intensely as they would like, will welcome the opportunity of easily acquiring the clearest possible view of the present condition of hygiene in theory and in practice.

In this connection, all the hygienic achievements of former ages and nations will be comprised in a special section, the historical department. This department will be particularly instructive as showing what splendid provisions were made for the physical development of the individual and of whole races thousands of years ago, and how afterwards in later centuries mankind, through the neglect of hygienic ideas, became a prey to the most frightful suffering and afflictions.

A special characteristic of a hygiene exhibition is its peculiar value for the general public. Hygiene has become to-day of capital importance to our whole life, and it is clear beyond any doubt that it is destined to enjoy a future surpassing all expectations. Although the last century, through the exceptional development of human activity, has brought external culture and its technical appliances to a height never before attained, inner culture on the other hand, the care of man himself, has made no advancement. The feverish competition which has siezed upon all branches of human activity has led inevitably to an overtaxing of strength which threatens to destroy in time the equilibrium of health. Already, as a simple reaction against the exaggerated valuation of external culture, the new century demands a return to the care of man himself.

It is an actual fact that our generation is, we might say, in a hygienic mood. Man longs for an intensified feeling of good health and demands hygienic instruction.

To lay the foundation for such instruction is another leading subject of the hygiene exhibition. The visitor shall receive here for once a clear conception of the nature of the human body and of the functions of the various organs. He shall see the demonstration of the dangers that threaten the body, he shall learn how he can help towards warding off these dangers and how it is possible to maintain and, if need be, improve the condition of his own health and strength.

A further department will be allotted to sport. The rapid development of physical training as a sport in recent decades has frequently had as its consequences a competition which has led to excess, indeed in a measure, to errors. To exert a discriminating influence and to smooth the way for a truly hygienic pursuit of sport, is the purpose of the sport department. Through the illustration of all kinds of physical exercise, as well as through the scientific demonstration of their effects upon the human body, the principles of hygienic sport shall be exemplified to the physician, the educator, and also to the layman.

In the totality of all these demonstrations a broad field will also be offered to the many branches of industry to exhibit their products and to display to administrative bodies as well as to the private citizen those appliances which are of practical assistance in effecting hygienic measures. Here, in the first place, special industries will exhibit the numerous apparatus, instruments, and mechanisms of all kinds which are required for the investigations and technical work of hygienic research and practice. These industrial exhibits may be expected to produce most profitable results. The endeavor to lead a healthful life induces man to remould many of his surroundings according to hygienic principles; and a large systematic exhibition of model specimens from all fields, which can serve as a guide for individual use in the future, will surely arouse the keenest interest in all circles of the public.

* * *

All these exhibits promote the two main objects of the exhibition; first, to present to the hygiene specialist, physicians, administrative officers, state functionaries, teachers, engineers, political economists the results of the latest hygienic investigations, to give them a distinct picture of all that has been accomplished in the field of hygiene; secondly, to impart hygienic instruction to the people and thus strengthen in the masses the sentiment for health and hygiene. Where this sentiment is aroused, the professional health worker has a good field of labor, he will easily succeed in winning authority for the demand of hygiene. But it is of the greatest interest to governments to strengthen the popular sentiment for physical health and hygienic measures. The millions which states even to-day expend for the care of the public health will bear ripe fruit only when the people in their turn show insight and understanding for hygienic measures and principles. If the exhibition is successful in exerting such an influence for the hygienic enlightenment of the people that public consciousness becomes fully alive to the significance of hygiene then the International Hygiene Exhibition of 1911 will effect a work of great import to civilization.

In the following we present the groups of the exhibition and their various subdivisions.

Group I:—Air, Light, Soil, Water.

A. Air; B. Light; C. Soil; D. Water.

Group II:—Settlements and Dwellings.

A. Planning of Towns and Cities; B. Planning of Buildings; C. Ventilation; D. Heating; E. Lighting; F. Water Supply; G. Scavenging and Cleaning; H. Disposal of the Dead.

Group III:— Nutrition and Foodstuffs.

A. Nutrition; B. Animal Foodstuffs; C. Vegetable Foodstuffs; D. Beverages and Condiments; E. Examination of Foods, Beverages, and Condiments.

Group IV:—Clothing and Care of the Body.

A. Clothing; B. Care of the Body; C. Physical Exercise.

Group V:—Profession and Trades.

A. The Physiological Conditions of Work; B. Causes of injuries done to Health during work; C. Injuries in different occupations; D. Labor conditions in relation to Social Hygiene; E. Care of the Working Classes.

Group VI:—Infective Diseases.

A. Principles of Microbiology; B. General Campaign against Epidemics; C. Disinfection; D. The different Infectious Diseases; E. Animal Epidemics transmissible to man.

Group VII:—Care of the Sick and Life-saving.

A. Care of the Sick; B. Life-saving.

Group VIII:—Children and Adolescents.

A. Care of Infants; B. The School; C. Care of Children outside of School.

Group IX:—Traffic.

A. On Land; B. By Water; C. Accommodations for Travellers.

Group X:—Army, Navy.

A. Army; B. Marine Hygiene.

Group XI:—Hygiene for the Tropics.

A. Tropical Climate; B. Habitation; C. Mode of Life and Nourishment; D. Clothing; E. Tropical Diseases.

Group XII:—Statistics.

A. Fertility and Increase of Population; B. Morbidity Conditions; C. Mortality Conditions; D. Expenditure for Public Care of Health.

Special Groups.

Tuberculosis, Alcoholism, Venereal Diseases, Cancer Diseases, Diseases of the Teeth.

Historical Section.

A. Personal Life; B. Environment; C. Public Life; D. Hygienic customs, traditions and laws; E. Development of statistics on health and illness; F. Ethnographic supplements and parallels to the history of hygiene.

VENTILATION IN SCHOOLS.*

By W. A. EVANS, M.S., M.D., LL.D., Chicago.

Commissioner of Health, Chicago; Professor of Hygiene, North-Western University Medical School.

Good air and sunlight are necessary at every age period. Probably this need is never greater than during the school years. From seven to seventeen the body is changing greatly. These are the years of plasticity, and at the same time they are the years in which plasticity begins to give way to crystallizing. It is a bad time for the body to get below par. Habits are being established. Eye accommodation is finding itself; the shape of the lens is being established.

There is some reason for believing that the body is charged with a certain number of potential units. When a certain number have been used, repair is possible. There comes a point beyond which repair cannot be established.

If a child is under strain of eye or brain for ten years in the school room, the effect may not be seen at once, yet it will figure in the failures of recuperation which are experienced years afterward. Therefore the school years are tremendously important.

The Chicago schools are heated by hot dry air. In the higher-grade installations the temperature is held at 72° F. The relative humidity is 30. 1800 cubic feet of air per pupil per hour is pumped into the room. In the older installations we frequently find the temperature well over 75° F. and occasionally over 80° F. It has been assumed that because 1,800 cubic feet per pupil per hour is pumped in the ventilation is as it should be. The assumption is rarely justified.

Many clinical observations have demonstrated that school schildren do not do well in badly ventilated rooms. Dr. A. W. Schram of the Graham School found that such children were prone to infection with the contagious diseases, they had colds, "snuffles," enlarged glands and tonsils. They were mouth breathers; they were pale, flabby, nervous, and subject to headaches. Principal Watt of the same school found that they did not learn readily. They were dull and inattentive.

The windows were raised, the air made fresh and moist, the temperature was lowered to 60° F. and below, according to the outside temperature. The result was that the children were healthier, freer from colds and infections; the "snuffles" decreased. Besides this the children learned faster and better. The principal, viewing it from the pedagogic standpoint, was more impressed even than the school doctor.

As to light: I am strongly of the opinion that the room should be narrow; that it should not be wider than twice the distance from the top

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of the window to the floor; that the proportion of floor space to wall space should not exceed one to four; that the windows should be so placed as that the light comes from behind or to the side of the pupils, or, rather, that in looking toward their books, the teacher, or the blackboard, they should not have to look directly at a strong light, or their books should not be shadowed so as to strain the eyes.

These effects can be had in various ways. The teacher can be seated at the back of the room with the students' backs to the teacher; or shades pulling up from below can make a dark background for the pupils, or the teacher can be so placed in the room so that the wall furnishes a dark background. Blackboards should be treated in the same way.

Believing, as I do, that the removal of air should be as direct as possible, I believe in low ceilings. Between the ceiling and the heads of the occupants of the room is a volume of warm, foul air, which is being chilled and dropping into the breathing zone all of the time. The less space you have, the less foul air there will be to drop back into the breathing zone. I therefore believe in an eight or nine foot ceiling. You will get the operators to heat only a certain volume of air and they will heat the same volume whether the ceiling is eight feet or twelve. By taking off the extra four feet you increase the amount of air which will be furnished in the breathing zone and that is what counts.

But the principal thing which should interest us is ventilation. The harm which is done by bad air falls into two general groups: The quick acting of air-borne infections, and the slow acting or air-caused conditions. Some illustrations of the former are influenza, common colds and cerebrospinal meningitis, and possibly anterior poliomyelitis, diseases in which the bacteria can be transported considerable distances; pneumonia and tuberculosis, where infections cannot be transported far, and scarlet fever, diphtheria, and measles which can only be transported very short distances.

Illustrations of the latter group are drowsiness, sleepiness, mental hebetude, headache, lassitude, muscular flabbiness, anemia, chlorosis, chorea, abnormal menstruation, mental irritability and exaggerated susceptibility.

The causative agents in the first group in the order of their importance are: Bacteria, dust, humidity, heat, organic exhalations and odors; C O and C O^2, almost negligible.

The causative factors in the second group in the order of their importance are: Heat, humidity, organic exhalations, C O^2, C O, bacteria, dust, odors. These different elements, with the exception of bacteria, have been so thoroughly discussed that I need not discuss them now.

Many efforts have been made to discover pathogenic bacteria in air. In these cultures saprophytes usually overgrow, and the tests are negative for tubercle and the usual pathogenic bacteria. Conclusion that pathogenic bacteria are not spread by air cannot be logically drawn. Efforts to find typhoid in a general water supply which we are certain is spreading typhoid fever are unsuccessful. Efforts to find typhoid in a milk supply proved epidemiologically to be typhoid spreading have proven fruitless. Nevertheless, we do not conclude that there is no typhoid there.

The mouth has been filled with *Bacillus prodigiosus,* and petri plates have been exposed at varying distances, with quiet breathing, talking, coughing, etc. From this it has been concluded that bacteria can be thrown through the air about twenty feet, and the inference is drawn that that is the limit of the danger zone. The air in front of quiet breathers has been found to have fewer bacteria than when the same air was inhaled. The sum total of all of these observations is an idea that bacteria are not air borne; that they are spread by physical contact. I contend that the inference is unwarranted. Such experiments would have to be impossibly protracted to give results from which conclusions could be drawn.

A person breathes sixteen times a minute for seventy-five years. The absence of pathogenic bacteria from a given cubic yard of air does not prove that there will not be pathogenic bacteria in some of the other yards of air which the man will breathe in his lifetime. And a man only gets consumption once, scarlet fever and diphtheria once; few get pneumonia more than once. More than that: Let us say that only one man in four gets a tuberculosis infection; that is a total three hundred year period with sixteen breath intakes during each minute of the three hundred years. What conclusion, then, is justified from a determination of the bacterial content of a single cubic yard of air?

Ventilation in schools is necessary for comfort during September and October, and May, June, July, and August in the Chicago climate. In the south we should add April at the front end of the season and November at the rear end. We may say, then, that a study of ventilation resolves itself into a study of ventilation for the months of November, December, January, February, March, and April. It is not of much importance during November and April. January and February are the very trying months.

It has been our observation that school air is too hot and too dry. The temperature has ranged from 70° to 80°; the humidity has been 30 to 40. The dust content has not been high. The odors are objectionable in certain schools in the poorer parts of town and in many schools on rainy days.

The Chicago schools are heated and ventilated as one item. The system used is the Waters. The air is taken in about thirty feet above the ground. It is not cleaned. It is heated to about 110° to 130°, according to the temperature of the outside air, the velocity and the direction of the wind, and the sunshine. It is discharged into the school room at a point above the head of the teacher, by a large opening. It is discharged under an average velocity of 370 cubic feet per minute. It is exhausted near the floor line and usually on the same wall as the inlet. Eighteen hundred cubic feet per pupil per hour is pumped in.

The theory is that the air, being hot and going at a considerable velocity, will rise to the ceiling and flow across to the opposite wall, where it will fall from wall chill and then flow back along the floor to find its outlet. The system is plenum. Should the system work according to theory, the breathing zone of the children at the desks would be dead, and, therefore, polluted, air. As a matter of fact there are many currents and the air begins dropping to the floor almost as soon as it issues. The children situated back in the room do not get a very good supply of air. Much of the air short-circuits from the inlet to the outlet after travelling a short distance in the room.

What is the remedy proposed?

First:—Reduce the temperature of the rooms to a maximum of 68°. This temperature is more bracing. In such a temperature the exhaled air, being hot and moist, will rise right out of the breathing zone and be supplied by purer air.

Second:—Raise the humidity from 60 to 70. No possible objection can be raised to this except that it costs money to evaporate water and the windows will frost when the outside temperature gets to 20° F. and below. The best way to humidify is to introduce a spray of steam into the column of incoming air, if the air is to be pumped in. If the humidity is raised to 60, the pupils will be comfortable with a temperature of 68° F. What is saved on coal, as between 72° F. and 68° F., will more than compensate for the steam which is used to humidify. Some of the frosting of the windows can be prevented by putting a radiator under each window. In certain rare instances a fan throwing enough air against the glass to keep it warm can be used to prevent frosting. But, what harm does frosting do, any way? Its harm is negligible as compared with the harm of overdry air. It keeps out but little light, and under certain conditions of sunlight will give a mellower, softer light than the unobstructed pane. If the air is brought into the room through the radiators, it can be humidified by pans of water or by some of the patent humidifiers.

Third:—Blow out the air in the room at stated intervals. This is best done by raising the windows and allowing the air to blow briskly through. A change of the air four times an hour will be effected by currents which are so mild that they will not lift bacteria. In consequence the bacterial flora of the air neither decreases nor increases unless it is being modified by animal inhabitation. If, however, the wind blows briskly in and out through windows, the bacterial flora of the air will be reduced 99 per cent. Practically, the way to effect this is to have the teacher throw up the windows when the children go out at recess. When they return they are warm, they have just made heat by exercising. By the time their heat equilibrium has returned to normal the heat equilibrium of the room will have been reestablished.

Fourth:—Decrease the dust content of the air of the school room by having the students at the blackboards use an eraser which is very slightly damp. A piece of cheesecloth fastened over the eraser does well; or the fat can be extracted from an ordinary eraser by ether or naphtha. If the eraser is too moist the board dries slowly.

Fifth:—Introduce the air into the room so as to keep the expired air as much separated from the fresh air as possible. This means direct removal of the air from the breathing zone. This cannot be done if the room is heated and ventilated by the same air. Such air is introduced at 110° F. to 130° F. If it was introduced near the floor and the outlets were placed near the ceiling the hot air would rush straight from the inlet to the outlet and it would be very difficult to prevent great loss of heat. The only feasible thing to do when heating and ventilation is done with the same air is to put the hot air in high and take it out low. The more rational plan is to have the air enter directly from the outside through holes in the walls; these holes to be closed by adjustable diaphragms. The air should pass directly through radiators and be discharged into the room at such a temperature as to maintain a temperature of 65° F. to 68° F.; other radiation to be a hot water or steam gravity system. The radiators should have water evaporating attachments. The air should be introduced in the room at several different points through ducts inside the room, with many openings in the ducts; the exits to be on the inner walls at, in, or near the ceiling; the gathering ducts to lead to the attic with the smallest possible number of turns or angles. In a windy, cold climate, *e.g.* that of Chicago, the duct should lead to a central large exhaust fan in the attic. In a less cold climate, for example, Cincinnati or Louisville, the ducts can lead directly to the roof and open to the outside, surmounted with one of the perflation devices to accelerate suction and to prevent down draft. The philosophy of this suggestion is that when the weather is not extremely cold, and all bends and turns are eliminated from the exhaust ducts, the fans can be eliminated. In a milder climate such as that at Memphis, the ducts can be made to discharge from each room directly to the outside air, the outlet being at the ceiling line. In the far south, *e.g.* New Orleans and Mobile, the windows can be used all winter long, both for inlets and outlets, with this single suggestion, that the radiators be so placed as that they will come a foot or two higher than the bottom of the window. When in cold weather the window is raised six inches or a foot from the bottom, the cold air which enters through the opening will pass through the radiation.

The advantages of such a method over the present method are:

1. The cost of installation will be less than the cost of installation at present employed. The system of ducts is much simpler and the capacity of the fans will be much less.

2. The cost of maintenance will be much less.

(a) On still days the fans will not run at all.

(b) On windy days the fans need only be used to exhaust the air from the rooms on the leeward side. The rooms on the windward side will exhaust without any artificial aid.

(c) The volume of air needed per pupil per hour can be reduced from 2,000 cubic feet per pupil per hour to 1,000 cubic feet per pupil per hour, or even less where the foul air is removed without much admixture with the fresh. In the language of the British Departmental Committee on Ventilation of Factories and Workshops, 1907, "The quantity of air depends on the distribution; and in many cases a relatively small quantity well distributed is far more effective than a large quantity badly distributed."

The clinical observations upon which this paper is founded have been made by the Chicago School. Inspectors under the direction of Dr. I. D. Rawlings and especially by Dr. A. W. Schram.

The chemical, bacteriological, and physical examinations have been made by the chemists in the City Laboratory.

The observations on the pedagogic side have been made by Principal Watt.

◆

—*On the ground,* it is said, the students of the university have not heeded his appeals to participate in college athletics as they should, Mr. Craighead, the president, has announced that hereafter Tulane will have a taste of compulsory athletics. Every freshman and sophomore at the university will be compelled to take a certain amount of exercise prescribed by the faculty. Outdoor work will constitute the greater part of the physical requirements.

TRAMPING.*

By Lorle Stecher, Bryn Mawr, Pa.

Being a short synopsis of the German book „Das Wandern".

"We call the young out into beautiful nature where they can strengthen their bodies, quicken their senses and enrich their minds. In company with congenial, energetic wanderers, to the sound of joyful songs, with small purse but glad heart they shall make pilgrimages through the fields of their fatherland, (they shall) avoid as much as possible the inns with their luxurious table and soft beds.....A well filled knapsack, a wanderer's staff and a joyous heart—these are his only baggage and with these he goes easily through the world." Thus a German writer describes the holiday pleasure of a genuine "Wandervogel." It was to secure to youth the pleasures of intimacy with nature, the sense of the charm of hill and valley, the delight in the simple primitive life that great men such as Rousseau and Jahn and Goethe have believed in—it was for these purposes that organizations like the Wandervogel (migratory birds) were formed years ago in Europe and are beginning to be formed in America. This conscious striving for "Return to Nature" after the example of Rousseau had as its practical purpose the regenerating of the nation's stock, exhausted after long years of civil and international war. The movement reveals, however, to the thoughtful mind, merely the cropping out of the old unquenchable instinct of *Wanderlust,* the restlessness that incited the tribes of old to their world wandering and urges the youth of to-day to make trial of the world. This spirit, which has animated traveling scholars throughout the ages, lead in 1876 to the definite organization of the French "Caravanes Scolaires." Then the agitation for such wanderers' clubs lead in Germany to the organization of many societies, the foremost of which are the "Alt Wandervogel (first organized) and the "New Wandervogel." Since 1898 the number of these societies has multiplied until now every little village school, every trade union, has its regular walking trips. In our consideration of the subject we cannot do better than follow the plan of H. Raydt and Fritz Eckardt in their exhaustive book "Das Wandern." After the introduction, which gives one a wonderful feeling of the charm and joyousness of these "journeys of the bees in search of the honey of life," as Vater Jahn called them, they take up a series of book reviews, the value and purpose of wandering as a source of true education, self control, self denial; they dwell on the knowledge of geography and national history which a child will absorb by seeing, hearing, collecting, on these observation tours; on the virtues of sympathy, social feelings, humanity, which spring up under the beneficent influences that surround the wanderers.

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* „Das Wandern" by H. Raydt und F. Eckardt. Second edition, published by B. G. Teubner, Leipzig, 1 Mark 20 Pfennige.

In a second chapter the authors treat of the modes of wandering that are in use in Germany, the mere pleasure excursion of a group of students under a teacher, the class trip which is prescribed by the board of school directors as a regular school exercise, the "Turn-march" a strenuous endurance walk on the order of the prescribed military exercises, the vacation trip lasting perhaps a few weeks and including short train journeys, even the walk which is a series of games, relay races, hare and hound hunts. The authors urge that women and girls be given opportunity to enjoy such excursions also. They urge furthermore, that school festivals be more generally held in the woods and fields whither the whole school can march as a merry yet orderly company. Hill and mountain climbing, snow-shoe and skating journeys in winter, night tramps by moonlight or in the early hours of the morning, walks toward the sunrise—all these delightful forms of wandering are suggested.

The third chapter deals with difficulties in the way of wandering and shows how they are met in Germany. As to the question of whether the school is justified in compelling children's attendance on the tramps, the authors, after dwelling on the benefit to the child of individualistic tendencies, of such social exercise, express the belief that school boards should make compulsory not only certain "play afternoons," as has already been done in many German states, but also regular class excursions. This of course brings up the difficulty of the responsibility for the safety of the pupils. In Germany this is met by the laws compelling any person who acts as leader for a company of wanderers to take out accident insurance. This may seem to work something of a hardship for the teacher, but benefits are being secured by teachers' organizations which often have their own insurance departments. The time consumed by such wandering is another difficulty not so much for school children as for business men. This is met by conducting the walks on Sunday. Surely no time could be better for such physical and spiritual refreshment. The cost of all trips is kept as low as possible. It has been found that a child spends on the average 16 pfennig (4 cents) a day. The "Alt Wandervogel" reports that its members spend 1 Mark (25 cents) a day in addition to train fare. "Ueber Berg und Thal" tells that a 5 day excursion, including railway fare, cost each person 5,50 Mary ($1.38) and a 9 day trip 11,57 Mark ($2.89.) In many places there is a public appropriation for the use of schools and societies. The last great necessity, that of competent, enthusiastic leaders, can be met only by enthusiasm on the part of teachers and by gradual training of the physically and socially qualified among the older wanderers. The cause is being greatly helped by the railway companies who convey parties of wanderers at reduced rates, and by inn keepers who accommodate the members of the great excursions, sometimes scores in number, at a small price per person.

The closing chapters are occupied with some excellent instructions about planning the route, equipping the party, provisioning, camping, rendering aid in case of accidents, etc.

After reading of what is being done in Europe in the field of organized wanderings one is filled with the hope that the time is not far off when America, too, shall have in every town some society like the Wandervogel. It would be a potent means of reform, education and inspiration to the dwellers in our crowded cities.

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NOTES AND COMMENTS.

—DURING THE MONTH of January the Playground Association of America has been conducting Playground Institutes in Pittsburg, in Baltimore, in Detroit, and in Holyoke. The purpose of these institutes was to make possible an exchange of ideas, and to allow a full and free discussion of the problems of playground administration. As quite a number of representative men and women were selected to address and conduct these meetings the results should show themselves during the coming season in more effiicient work. It appears to us that the results of such institutes would be still greater if practical work as well as lectures were attempted. We do not mean exhibitions of work by children, but work done by the members of the institute themselves.

—THE NEW YORK CITY PUBLIC SCHOOLS, whose physical training is under the direction of Dr. C. Ward Crampton, have instituted a plan of "local supervision" of physical training. This plan provides for the appointment of the principal or the assistant to principal in the school, or a teacher with sufficient time, to the duty of supervising the physical training work in classrooms, gymnasia, playgrounds, etc.

Meetings for these local supervisors have been held and general directions given. For the reason that the local supervisors were comparatively new to the subject, a circular stating "what to see in the class-rooms was printed and is given in this issue of the Mind and Body. Dr. Crampton states that "The whole emphasis of physical training work must be removed from mere method and placed upon the getting of results. We must depart from 'the doing of things' and arrive at 'getting things done.' " These suggestions have met with so much favor that an extra edition of 10,000 was printed to meet the demands of class teachers who wanted to produce results for the local supervisor to "see."

NIGHT AIR AND HEALTH.

We are in the midst of the season when the days are shortest and the hours of sunshine fewest. We are also at the time when respiratory affections are commonest. "Colds," as they are called, are, however, set down without more ado as due to changes of temperature, and the possible connection between these bothersome ailments and lack of sunshine and fresh air is very little considered. If these conditions are supposed to enter as causes of the greater liability to diseases of the air passages it is only because of the traditional harmfulness of night air and the necessity for greater exposure

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to it during the season of shortest days. For most people are firmly persuaded that even for the healthy night air is not innocuous, while for the delicate, and especially for sufferers from pulmonary affections, to be out in night air is tempting fate. The free admission of the air at night to the room of an invalid is apt to be considered a serious risk. Medical men are constantly pleading for more air for the sick room and especially at night, but popular tradition still holds its sway and limits ventilation below the point of proper wholesomeness.

More than half a century ago a great English physician said that the only pure air at night is the night air, and pure air is the great desideratum in health or illness. Of late there has come the realization that the night air, especially in our large towns, is more wholesome than the day air. For one thing it contains less dust, because there is less movement on the streets to disturb dust accumulations and lift them into the grasp of the winds. How important this matter of dust and its dangers is may be gathered from the fact that in the recent European sanitariums for the treatment of tuberculosis there is a room adjoining the main entrance where patients must remove their walking shoes and don house shoes and where they must brush their outer clothing in order to avoid, as far as possible, carrying dust into the living rooms. Dust is not alone irritation, but it carries with it many living germs, most of them harmless, but some capable of setting up annoying catarrhal conditions if they happen to find a resting place on already ailing tissues.

The old prejudice against night air is due to the former theories with regard to the origin of malaria. As the name indicates, this was thought to be due to bad air. Malaria is most frequently contracted by exposure at night. We now know that the reason for this greater liability to malarial affections after nightfall is that the mosquito carrier of the disease flies about only after the heat of the day is over. Unacclimated observers have lived during the malarial season in a tent on the Roman Campagna, or in the still more malarial country back from Naples, and have never suffered the slightest inconvenience from the disease. They have not avoided the night air, but have avoided the mosquito. The night employees of the Italian railways in malarial districts always suffered severely from malaria until the adoption of face veils and gloves, while other precautions against the mosquito have in recent years greatly lessened the amount and severity of the malaria among these people.

How little medical men remain attached to the old tradition of any possible harmfulness of night air may be judged from recent discussions and observations with regard to pulmonary diseases. In London during last winter the most successful treatment of tuberculosis within the city limits was reported from St. Thomas's Hospital, where patients who would consent to the conditions were kept constantly night and day on an open balcony. Sufferers from pulmonary hemorrhage and from painful tuberculous pleurisy were relieved of their symptoms by this absolute open-air treatment where all other remedies had failed.

For health and illness one of the important conditions is an abundance of fresh air. No old-time prejudice against night air should be allowed to limit the supply. Air, unlike water, very rarely takes up disease germs to distribute them. Even influenza, one of the most easily distributable of diseases, has never been known to spread faster than the means of communication between communities. The unreasoning fear of night air is a relic of days when less rational theories of health and disease prevailed. Sleeping rooms especially need thorough ventilation, and this is even more important for sufferers whose external respiration is interfered with by reason of pulmonary trouble or whose internal respiration is disturbed because of cardiac affections. —*The Independent.*

AMERICAN PHYSICAL EDUCATION ASSOCIATION.

The annual meeting of the Council was held in New York City, Saturday afternoon, December 31, 1910. There were eleven member of the Council present: Dr. A. K. Aldinger, New York Society; Dr. E. H. Arnold, New Haven Society; Elmer Berry, Springfield Society; Dr. C. Ward Crampton, Public School Society; Dr. C. E. Ehinger, Philadelphia Society; George W. Ehler, Member at Large; Dr. J. H. Mc Curdy, Editor-Secretary-Treasurer; Dr. R. Tait McKenzie, Executive Committee; Dr. George L. Meylan, President; Baroness Rose Posse, Therapeutic Section; Dr. D. A. Sargent, Society College Gymnasium Directors.

The secretary presented the names of those two years in arrears. The resignations presented during the year were accepted. The following local societies were dropped from affiliation because of failure to live up to the constitution in the matter of membership, (they having had less than the required ten members for two years), Cleveland Society and Wisconsin Society.

The secretary-treasurer-editor's report was read and accepted.

Dr. McCurdy submitted a comparative statement of the standing of the Association in regard to membership, subscription list, financial standing and the Review.

It is now three years since the dues have been raised to three dollars and the Review changed from a quarterly to a monthly. We can now, for the first time, get a correct view of the effect of this move upon the Association from the standpoint of members, subscribers and financial resources, as all members are carried on the membership list for two years after they have ceased paying dues, unless their resignations are received.

Total	1907	1910
Income	$3216.84	$5532.29
Expenditures	2759.39	5027.94
Balance	457.45	504.35
Paid up Members	797	695
Applicants	0	20
Subscribers	71	200
Total	868	915
Members in arrears	262	294
Total	1130	1209

As you will note we have in the number of paid up members (including applicants) 82 less than in 1907. We have in the number of subscribers 129 more. This gives us a net gain of 47 on the paid-up mailing list of the Review.

The Council in contemplating this change of the raise of membership felt that some members would necessarily be lost through the raise of fee, but that the value of membership would be more to those who could belong to the Association. It seems probable that the loss in membership is due principally to the raise of price of the dues, but it should not be forgotten or overlooked that we have also lost the second largest local society from affiliation, the Boston Society. The local societies are the natural membership committee of the Association, and should materially aid in keeping up the membership. That they do this to a considerable degree is seen from the increased number of members from Los Angeles and vicinity which have come in through the forming of the Los Angeles local society, and the number from Central Illinois which have come in through the forming of the Central Illinois Society. The society in Utah has not as yet gotten upon its feet, but we are hoping through the enthusiasm of Mr. Bolin and Mr. Day who have lately gone there, that they will soon be one of the strongest local societies on our roll. We are planning on making a strong call from the office for new members early in the year and shall be glad of any names or any information which may make this call a successful one.

The Review has been increased from 388 pages published in four numbers to 725 published in nine numbers. The increase in size has not been the only thing which has increased the value of the magazine to physical directors. It is important that physical directors should keep in touch with many phases of education other than those with which they are directly concerned. We have given the best material presented at the Intercollegiate Athletic Association, the School Hygiene Association, the Athletic Research Society as well as many papers presented before local societies. We are publishing a bibliography of physical education which enables one to keep in touch with all the latest literature on his own specialty whether it is practical or theoretical or both.

The Central Illinois Physical Education Society having fulfilled all conditions for affiliation and having presented application for the same was declared affiliated.

Twenty new applications for membership were presented and elected.

Dr. Crampton moved that a vote of thanks be extended to Dr. Mc Curdy for the business-like manner in which he had conducted the affairs of the Association.

Dr. Arnold moved that Mr. Ehler be instructed to cast the ballot for the re-election to the editor-secretary-treasurership of Dr. J. H. Mc Curdy. This was done.

The ballots were then cast for nominations for president. Dr. Meylan and Dr. McKenzie received the highest number of votes, with other scattering votes. Dr. McKenzie moved that Dr. Meylan's nomination be made unanimous, which was done. Dr. Meylan was then elected as president for the next year.

Mr. Ehler, as chairman of the program committee presented the following tentative program for the convention which is to be held in

Boston probably April 12-15. The exact date to be left to the executive committee:

TENTATIVE PROGRAM FOR THE CONVENTION TO BE HELD IN BOSTON APRIL 12-15, 1911.

Wednesday—
  2:00 P. M. Therapeutic Section Meeting.
  9:00 P. M. Reception.
    President's Address.
    Address of Welcome: Social and Moral Values of Physical Education, President Lowell, Harvard University.

Thursday—
  9:30 A. M. Administration and Management of Physical Education in Public High Schools, Tom Browne, Brooklyn.
  10:00 A. M. College Section
    (a) College Athletics, George W. Ehler, William F. Garcelon.
  11:15 A. M. Secondary School Section
    (a) Organization and Management, Dr. Page, Head Master, St. Paul's Andover.
  1:00-2:00 Luncheon.
  2:30 P. M. Visits to Brookline, Boston Baths and Municipal Gymnasium, Social Centers, etc.
  8:00 P. M. Public School Section.

Friday—
  9:30 A. M. Preventive Values of Certain Exercises, A Preliminary Report, Dr. E. F. Arnold.
  11:00 A. M. Administration of Physical Education of Girls and Women, Jessie H. Bancroft.
  11:45 A. M. Administration of Physical Education in Public High Schools, Randall Warden.
  1:00-2.00 Luncheon.
  2:30-10:30 Demonstrations.

Saturday—
  9:30 A. M. Business Session.
  10:30 A. M. Administration and Management of Physical Education in Social Organizations; E. A. Anderson, Cleveland, O.; Don North, Springfield, Mass.
  11:15 A. M. Physical Welfare Work of a City, Richard Cabot.
    Meeting of the Council.

◆

Scholarship for Relay Race.—Instead of being held in the gymnasium this year the annual indoor athletic meet for Harvard men only is to be held in the Mechanics' Building, Boston, under the auspices of the Boston A. A., according to plans now being considered. There will be an interclass relay race, and in connection therewith a novel feature. The novelty is a scholarship of $250, which goes with the winning of the relay race. A Harvard alumnus has given this amount, the conditions being that some member of the class represented by the winning team is to get the $250 as a scholarship. The date of the meet is Feb. 25.

Is the Awarding of Prizes or Medals to the Victors in Athletis in Keeping with the Spirit of Amateurism.

By HERMAN F. BRETTHAUER, Charleston, S. C.

Before entering upon the discussion of this topic it will be well to emphasize what is meant by the spirit of amateurism as applied to athletic sport. It is a recognized fact that a certain amount of physical activity is necessary to assure the normal development of man. If we are interested only in a healthy man, it would be a waste of time to pay particular attention to the ethical side of athletics, because almost any kind of athletic exercises will make a healthy man, but a healthy man is not always a good citizen. As the problem of the high school, the college, the Y. M. C. A., the playground, etc., is the making of useful citizens, it is the business of the various athletic departments of these institutions to work in harmony with the high purpose of education.

A student has reason to expect that a course in a law school will make him a lawyer, but it depends mainly upon the spirit of the teaching corps, or in other words the ethical principles inculcated with the technical teachings, that determines whether the students will turn out a good lawyer, such as the community needs, or another "shyster." The spirit of amateurism is interested in good citizenship and it demands that athletics in our educational institutions be conducted not for the individual, or any particular school, but for the good of the community. Taken in this sense amateurism is in sports what patriotism is in politics. The spirit of amateurism is the spirit of fair play. It does not reduce the pleasures of competition, but it does conflict with the spirit of commercialism, which has crept into our athletics. The educational value of athletics is being recognized more and more by educators, who insist that the student body become more actively engaged in athletics.

The normal youth naturally takes to all kinds of athletics. The love of contest flows in his viens and "sport for sport's sake" is not an unreal thing for him. It does not come naturally to him that athletics can be used for personal gain. This possibility is shown him. Perhaps the first demonstration is witnessed at the athletic contest of some Sunday-school picnic. These Sunday-school contests, it may be said, are usually badly managed. The main object, in most contests at least, appears to be to have races and to see that somebody gets the prizes. Just as soon as a boy is given money as a prize or a medal for his effort in a contest his mental attitude toward athletic practice is likely to change. Heretofore the glory of winning has filled his chest with satisfaction, but now he sees the never satisfying path of the pot hunter.

The athletic organizations in the United States, according to the rules of the Amateur Athletic Union, are permitted to give individual prizes or medals not to exceed $35 in value. These prizes are given with the understanding that they may not be pawned, sold or used to any financial advantage. This system of prize giving is virtually giving valuable prizes and then attempting to legislate the value out of them. Nevertheless an athlete winning a $35 parlor clock enjoys a privilege which would cost others just that amount in hard cash.

Amateur ranks are overloaded with athletes, who in the ceaseless chase after the spoils of the prize system have become dulled to the wholesome pleasures of amateur sports. Recently fifty athletes in good amateur standing, all residing in one city in New York State, combined to demand that the $35 limit on individual prizes be raised. A similar attempt was planned in New York city. It is such people as these that make the management of amateur athletics so difficult. The withdrawal of all individual prizes would eliminate the pot hunters and give cleaner athletics. Some colleges have already made excellent headway along these lines by substituting ribbons for medals. We need not fear that the withdrawal of valuable prizes will cause interest in athletics to wane. Certain facts point the other way. The Turners of the United States manage to assemble between two thousand and three thousand active competitors at their national championship events. In their contests each winner receives a paper certificate. The champions are crowned in addition with wreaths of oak leaves. They have eliminated the pot hunter. Their contests are the cleanest and the pleasantest to witness of any to be found anywhere in the country. A protest is rarely made. Contrast with this the athletic system for the enlisted men of the United States navy with its numerous cash prizes and side bettings. This system may be good to make efficient fighters, but no one has ever approved of this plan as being anywhere near ideal for the purpose of making good citizens.

It has been stated that the average boy or young man is both apt and eager to participate in physical activities. This prompts the query, why should artificial stimulation such as prize-giving be employed to induce our young men to take part in athletic sports? The answer follows. Athletic sports for which medals and prizes are given are usually individual events. They do not lend themselves readily to adjustment for team work, and as the formality of an organized athletic meet dampens the inherent arder of personal contests, athletic coaches find it much more difficult to line up a field and track squad than to secure a baseball, football or other squad in which team work is a prominent factor. When the athletic meet is expected to clear expenses, which it usually is, the difficulties of the situation are further increased. In this instance the public must be considered in planning for the meet, because they are expected to foot the bill. The athletic coach, therefore, must resort to some means to induce the members of his institution to take part in organized athletics. Just two methods of procedure are available. The first is to develop in members or students a greater sense of loyalty to his institution, a willingness to use their skill in the interest of their organization. The second is a short cut and consists in offering prizes, medals and other inducements. In view of the fact that amateur athletes are pledged to participate in athletics of all kinds because of their educational value and because of the pleasure they derive from such sport, the first method is the only proper course to follow.

The second method, the giving of medals or prizes of monetary value, appeals to the commercial spirit of our time. It aims to please the spectators to the neglect of the performers and opens the way for the train of evils now so apparently connected with our athletic practice, both in the amateur as well as in the professional branches.

The assertion is often made that this is a commercial age, and that athletics like everything else should affect and be influenced by the spirit of the times. This is a fallacious idea and one that has been tried many times before and always found wanting. The application of this idea ruined the athletic festival of the ancient Greeks. As these cultured people had practiced for many years a system of amateur athletics which has never been excelled, a study of their system would be profitable. The underlying thought of the Greek system was that the function of athletic competition was to develop a sound mind in a sound body, purely an educational feature in the making of good citizenship. The victors after going through arduous contests requiring speed and endurance were crowned with a laurel wreath. They received nothing of value. Often statues of marble were made for public places, showing the victors in their graceful development. Time was reckoned by olympiads and each olympiad derived its name from the athletic champion of the period. These contests were big affairs, drawing large crowds from near and far. There was no admittance fee. No medals were needed to bring out the contestants. Loyalty and pride in his home town prompted every able man to come forth and do his best. As long as the underlying principle was enforced, the Greeks had an ideal system of athletics. But when they began to reward the athletes on their arrival in their home town, a system of commercialism was started that ruined their entire athletics. It started innocently enough, by giving little trifles, but soon they were presenting more valuable gifts, including houses to live in.

The last chapter on the decadance of Greek athletics begins with the rich sporting gentlemen taking a hand in the game, for their own amusement. This class of men can see nothing beyond their own interests. They care little for the State or its citizen. These sporting gentlemen of ancient Greece kept athletes in their employ and ran them in races just as horses run today, without due regard to the nation's welfare. When the Greeks were deriving such marked benefits from their sports their motto was "sports for the nation's sake." This was gradually changed during the period of decadence to sport for revenue.

The spirit of commercialism is showing its deleterious effects in our modern athletic activities. Our high schools, colleges, universities, etc., admit the educational value of athletic sports and arrange to have them as a necessary adjunct to the regular class work, but little or no financial provision is made to carry on these activities. As a result the students feeling their responsibility in financing the institutions' athletics hustle to make athletics pay. A losing team draws small crowds, and but little financial backing, therefore the athletic association sets out to get a winning team. In this connection the short cut method is too often used and privileges are given, most of the time secretly, that make the winner of the $35 clock feel underpaid. Then expensive coaches are engaged not by the faculty, but too often by the students themselves, and it is generally understood that a re-engagement will not occur unless a winning team is produced. Under such circumstances it is expecting too much of our students, bubbling over with the healthy, but inexperienced vigor of youth, to assume the financial burdens of their athletic sports and live up to the dictates of clean sport and amateurism. Sport for revenue is the problem that looms up before them, and it looms up big. The fault lies not with the students, but with the faculties and boards of managers.

We have then in amateur athletics a system that permits the giving of valuable prizes in one branch of athletic sport, but not in any other. It is neither fair nor in keeping with the amateur spirit that a pole vaulter or a sprinter should be permitted to receive valuable consideration for his services, when the same privilege is denied the baseball, the football or basketball players.

The withdrawal of medals and prizes from amateur contests would do much for clean sport. This change, however, should be accomplished by a precedure more educational than legislative. By exercising a little patience and ingenuity many plans could be developed that would make athletics more attractive and more valuable without resorting to the giving of medals or prizes. An instance of this kind is the twenty-four mile relay race from Summerville to Charleston, arranged annually by the Charleston Y. M. C. A. Only teams of twenty-four men may enter, and each man runs one mile. Six teams with a total of one hundred and forty-four runners took part in the last race. This race possessed the elements of team and individual work, keen competition and intense excitement. The only prize was a modest silver cup, which the winning team may keep for one year. There were no entry fees or gate receipts. Love for the game was the force that actuated the contestants, and they ran as if they loved the sport with a full heart. No sort of individual prizes could have added any enthusiasm or popularity to this race. Similar events possessing novelty, attractiveness and high educational value have been arranged in many other places easily providing the feasibility of maintaining a higher type of competition athletics by eliminating the prizes.

THE NEW STADIUM AT TACOMA, WASHINGTON.

The city of Tacoma, Washington, last June dedicated its Stadium with a two-day festival in which 10,000 costumed school children participated.

Dug out of a verdant hillside which slopes downward to the placid waters of Commencement Bay, 154 feet above high tide and nestling at the base of one of the finest high school buildings in America, the Stadium is ideal in every respect. From any part of the vast amphitheatre a panoramic view may be obtained of two snow-capped mountain ranges, stretches of virgin forest and miles of the ocean tributary known as Puget Sound. It is situated in the heart of the city.

Although constructed at a cost of $135,000, raised by public subscription and school funds, the school department is free from debt now that the Stadium is completed. Not only is the structure valuable to the school department, but it is regarded as a valuable asset to the city of Tacoma. According to the recent federal census enumeration Tacoma has a population of 110,000.

The concrete steel seats of the new Stadium, 31 tiers high, aggregate 6.42 miles and afford seating capacity for 26,000 people. The structure is horseshoe in shape with a 2,000-foot retaining wall at the open end, which overlooks the waters of the Sound. It is 400 feet long, 390 feet wide at its widest part and 250 feet at its narrowest point. In building the seats alone 148 tons of structural steel was used and 180,000 cubic yards of earth had to be removed, although a natural depression made the project comparatively easy. Spacious dressing rooms are located under the seating space at each end of the horseshoe and are fitted up with 24 showers and all modern conveniences for athletic teams. The drainage facilities of the 2 6-10-acre field are excellent and 10,000 lineal feet of tiling used for this pupose makes it possible to drain the big field in one hour. A five-lap 16-foot running track runs around the outer edge of the field and two 20-foot stairways connect the Stadium with the high school grounds.

The dedication exercises were unique and replete with true Western vigor of enterprise. Ceremonial Indian dances with costume and scenic effects; a big track and field meet, including Japanese Jui Jitsu and other wrestling bouts; all kinds of costumed drills by the 10,000 school children participating, were among the features. The various foreign organizations of the city had volunteered their assistance in teaching the children the folk dances of a dozen nations and their performance was an exceptional success.

PLAY AND PLAYGROUNDS.

FIELD BALL.

In the "Turnzeitung" Mr. Hans Goetz of Milwaukee describes a game which he calls "field ball." The game has the general rules of captain ball but it is played on a court which is divided up in the order of the girl's field for basket ball. The advantage of the game is that there are no small bases on which the basemen must stay. In reality the bases are enlarged into fields in which the basemen and the guards may move about freely. Any number of players may play. See diagrams 1, 2 and 3 showing the court for eight, eighteen and thirty-eight players.

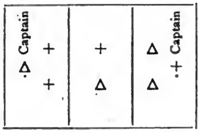

Diagram No. 1, Eight players.

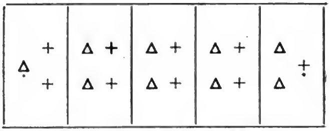

Diagram No. 2, Eighteen players.

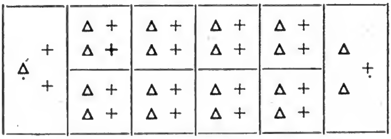

Diagram No. 3, Thirtyeight players.

The regular captain ball rules are used, excepting those which apply to a baseman staying on his base. Another difference is the fact that the captain is guarded by two players. As no apparatus other than a large inflated ball is needed, and the game may be played anywhere and by any number of players it seems to have in it all the elements that go to make up a useful playground or gymnasium game.

EXTRACTS FROM MEDICAL JOURNALS AND PHYSIOLOGIC AND HYGIENIC NOTES OF INTEREST.

By D. M. FERD. KROGH, M. D., Philadelphia.

The editor of "The Independent" in an article entitled "Baldness and the Race" calls attention to the difference of baldness, thhis occuring far more frequently in men than women. The causes are given as follows; using combs and brushes that have been used by others in hotels, barber shops, etc.; trying on hats that have been tried on by many others before. Vegetable bacteria or fungi are made responsible for the loss of hair. The article is concluded as follows:

"It seems probable that the institution of more vigorous measures of hair cleanliness in these directions and the employment of mild antiseptic remedies to destroy bacteria that have already gained a foothold, may result in decided increase in the average length of life of the hair of the next generation. It is a consummation devoutly to be wished and faithfully to be striven for, even with considerable trouble, since the present tendency to baldpatedness is eminently to impair the natural dignity and impressiveness of the manly countenance. It would even seem worth the while to appeal to legislation to help out individual effort by requiring barbers and all purveyors of combing implements and the like to see to their sterilization after use by patrons."

—*Right to pure air.* The New York supreme court has recently rendered a decision to the effect that a person—every person—has a right to pure air. In other words, the court holds that nobody has the right to pollute the air, which is the same thing. The decision ought to be read with a good deal of satisfaction by those persons who have been and are compelled to breathe the air that has been polluted by some smokestack that has seemed to delight in it.

The case was carried up from Rochester. The head of a company in that city was arrested for maintaining a smokestack that sent out volumes of black smoke, the city having previously passed an ordinance making such pollution of the air unlawful. The defendant urged in his plea that the city had no right to make such an ordinance; that it was unconstitutional and absurd generally for a community to undertake to regulate the smokestacks, and so on with the learned language which is so often employed to conceal the point.

But the court thought otherwise, and so held. It said that not only had a city the right to pass an ordinance making it a crime to pollute the air, but intimated as far as it could do so ethically that whether there were an ordinance or not no one would be compelled to endure air pollution any more than he would be compelled to endure the pollution of a stream of water upon which he depended for his drinking water.

Whether the decision is good law or not, it is good sense. Communities, when the country was young and struggling to become developed, endured a great many things they were not compelled to. But now that we are getting to be a civilized people, with a country pretty well developed, and all sorts of mechanical appliances rendering such nuisances as black smoke unnecessary, it would seem that it is about time to serve notice upon those persons who persist in polluting the air that there must some day be an end of the nuisance.—Clipping.

—*Blood changes produced by night work.* Gardenghi (Wien. klin. Wochenschrift), Charlotte Med. Jour., says that persons who work continuously at night, such as bakers, have a pale color of the skin. He has found by animal experiment that on withdrawal of sunlight a marked diminution of the hemoglobin and blood iron is noted. The reduction of the iron is somewhat less than that of the hemoglobin. The number of blood corpuscles, both red and white, is not altered; the ratio of the various kinds of leucocytes also remains unchanged.

He thinks that it is probable that withdrawal of light causes a deficiency in the absorption of iron and the formation of hemoglobin, rather than a destruction of the hemoglobin already formed. Accordingly, there is a noteworthy connection between hemoglobin and chlorophyl of plants, the formation of which, as is well known, also is dependent upon sunlight.

It is necessary to be specially constituted physically for some callings, if one would reach the top; but for all work it is needful that we be generally well put together, that we have "a good constitution," to use the expressive phrase. It is as necessary now, for the best kind of work, as it was with our grandfathers; as necessary for the clerk behind the counter, the barber at his chair, the preacher in his pulpit, as for the pioneer of our early historic time. For the mass of humanity it is still big muscles, backed by capacious nerve centers supplied in turn by a never failing digestive capacity, that counts. Machinery steps in to help out muscles, but nerve stress remains and needs developed motor centers to draw upon for energy; the muscular system is not out of service, while the sound digestive system is as important as it ever was.

Sufficient will-power will sometimes drive the body over obstacles apparently insuperable. So much we honor this power that we often overestimate it and forget it is a force that accomplishes only as it has tools to work with. Only the nutritive and nervous resources of a giant will respond to the ambition-lash of gigantic proportions. It is said of the President-elect by one of his college classmates that, while he ranked high in his studies, he still had plenty of physical reserve left to allow him to be a buoyant companion out of class hours. The lash of scholarly attainment did not exhaust his resources, and his constitution is still sufficient for the most arduous of tasks. In sad contrast was the young man in one of our leading universities who recently committed suicide, a man of the most brilliant attainments and already called to fill a high place in his special work. The only reason he gave, and the only traceable reason, was that he was worn out and could not stand the physical strain of it all.

Special physical deficiencies cannot always be estimated nor improved upon, though in the matter of vision it can be done. The general physical make up can, however, be better determined and can often be improved by care and study of our personal needs and by medical counsel that sees farther than the treatment of aches and pains. The special physical director and the family physician will more and more be looked up to for advice in such matters, as their ability to respond to such questions proves adequate.—The Dietetic and Hygienic Gazette.

In the past few years in Germany, under uniform direction, 157,361 school children have had their teeth examined. The statistics gathered by the bureau of dental hygiene in Dresden show conclusively that:

1. On account of bad teeth the physical development of the child is seriously retarded.
2. The more the physical development is disturbed the less in general is the mental capacity of the child.
3. The worse the teeth the worse, as a rule, is the school standing.

These are conclusions which demand serious attention from all the authorities who are concerned in the hygiene of the community. There is no doubt, that the development of tuberculosis, which every year in Germany kills 87,000 persons, mostly in the prime of life, is favored to a large extent by a bad condition of the teeth.—"The Dental Summary," Toledo.

There is no known drug that will add in the slightest degree to the strength or vigor of the human body, and no "tissue-builder" on earth except food. The only universally reliable "bracer" is exercise in the open air and sleeping with your windows open, and the only permanent tonics to the body are fresh fruit, red meat and green vegetables.

A dollar's worth of cream contains ten times the "strength" of any dollar bottle of tonic ever invented. Eat plenty of real foods, the best you can raise or buy, and you'll have little need of either medicinal foods or patent medicines. Any remedy which universally, or even in the majority of all cases, produces a sense of exhilaration and improvement is pretty sure to contain a "cheater" of some sort, usually either alcohol or opium.—Dr. Woods Hutchinson, in Delineator.

Eating Meat. When the boycott was started a year or more ago there were many persons who alleged that it would be but a short time until everybody would forget about it, with the result that in a few months there would be just as much meat consumed as formerly. Statistics now at hand, however, show the allegations to have been poorly founded. The per capita of meat consumption in this country is gradually diminishing, and it had its start upon the downward tendency when the meat boycott was launched.

It has not so greatly affected the price of meat as it was believed by many that it would, but it has unquestionably had some effect. For, but for the diminishing demand for meat the chances are, of course, meats would be still highger than they are at this time.

The number of vegetarians has not increased in proportion to the decline in meat eating. That is to say, there are not a great number of persons who have given up meat altogether. The number, indeed, does not affect meat prices, it is so small. But there are a large number of people who do not eat as much meat as formerly. Persons who formerly had meat three times a day, have reduced it to twice daily, and those who formerly had meat twice a day, have now, in many instances, adopted the once-a-day habit.

The meal that has suffered most, if that is the way to put it is breakfast. Formerly nearly everybody had meat for breakfast. At this time probably a majority of the people of this country do not have it at that time. And those who continue to serve meat at the morning meal, serve it in smaller portions, a bit of breakfast bacon, or a small chop being the portion.

The optimist is the fellow who believes that whatever is, is best. Then there is a large number who believe that while what is, is not always best, what is can be turned into the best. They are optimists in a sense, and sensible optimists. It is pretty hard for any one to believe that it is best that the meat trust get such a hold in this country that the price of meat is fixed so high poor people cannot get it. But nearly everybody can believe that, now that the trust has brought about such condition, it is going to be a good thing, or is a good thing, that we eat less meat. For there can be no doubt in the mind of any thinking man that the people of this country have been eating too much flesh.

Man is not by nature a meat eater. The habit was acquired. Or, those believing strictly in evolution, may argue that man has arrived at the point in his existence where he can and ought to give up the eating of flesh. Certainly man is so constructed, whether from design or through evolution, as to be able to thrive with no flesh food at all, just as he is constructed in a manner as to be able to take care of a reasonable amount of flesh. But neither those believing in the design theory or in the theory of evolution, can successfully claim that as much meat as the average American has been consuming is a good thing for him.

Probably those people who eat meat once a day are coming nearer to a solution of the problem of diet than any others. If our vegetarian friends object, it can be stated that such advocacy is at least a step toward vegetarianism, and they ought not to object to one's taking a step in the right direction, even if he does not continue moving until he is on the other side of the fence. Vegetarianism may some day be forced upon the race—it has been forced upon a large part of the world, as in India—but that time has not arrived in this country. So the best advice which the layman can give to the average man is to reduce his consumption of meat to one meal a day—in the interest of health, in the interest of economy.

The common drinking cup, used by whoever wills, which has since the year One been the vehicle of thirst-quenching everywhere, is to be relegated to the junk heap of the discarded things upon which the spread of knowledge has placed its ban. It has persisted despite the general understanding on the part of the public that it is a menace to health and safety, but at last statute law has been enacted and it is to go. The public, whether willing or not to continue to court disease and death while slaking its thirst, must now avoid the risk because the law decrees it.

On Oct. 1, in conformance with an act passed at the last session of the Legislature and signed by the Governor in April, new regulations made by the State Board of Health become effective which forbid the maintenance or use of the public drinking cup in Massachusetts and provides a fine of $25 for violation of the regulation.

After that date it will be unlawful to maintain a common public drinking vessels of any kind in any of the following places: "In any public park, street or way; in any building or premises used as a public institution, hotel, theatre, public hall or public school; in any railroad station, railroad car, steam or ferry boat."

Preparation for the enforcement of the new law has already been made on Boston Common and in other places about the city by the installation of the new drinking fountains which enable one to drink from a bubbling column of flowing water without having the lips come in contact with any of the metal of the fixture from which it flows. In the public schools these fountains have been or are being installed, and in not a few other public buildings similar changes are being made.

While only seven states have so far taken general measures for restricting disease by abolishing the public cup, individual action in many cities has banished this public menace. St. Louis, Mo.; Portland, Ore.; Boise,Ida.; Little Rock, Ark.; Wheeling, W. Va.; Fargo, N. D.; Colorado Springs, Col.; Camden, S. C.; Elgin, Ill.; Childress, Tex.; New Rochelle, N. Y.; Georgetown, Pa.; Rutland, Vt.; Syracuse, N. Y.—these and other cities have banished the common cup from every public building.

Forty state boards of health have by resolutions condemned the public cup. Twelve of these have decided to abolish it in the near future. Thirteen others, which cannot take such action without legislative authority, will seek the necessary enabling acts at the first opportunity. The Colorado and Nebraska boards are in the baker's dozen.

Educational campaigns to enlighten the public regarding the dangers of public drinking vessels ase being carried on at present in 32 states. Sixteen railroad companies now provide the opportunity for their passengers to purchase individual drinking cups at a nominal charge on board the cars of their passenger trains. The presidents of 27 other railroads agree with the attitude of the various state health boards in their opposition to the common cup. Municipal authorities in many cities other than those named are taking action to abolish the public drinking vessel in all public places, including theatres and department stores.—Boston Paper.

Most of the men who in recent years have lived far beyond the ordinary term of human life have been noted for their hobbies; that is, besides their ordinary occupation, whatever it may be, they have had one or more supremely intellectual interests to which they have turned for refreshment during most of their lives, and which have evidently proved not an expenditure of energyg, but a recreation in the etymological sense of that word, as providing an opportunity for other portions of their brain to thoroughly relax themselves.

Ordinarily if a busy man is compelled to stop work he gets short circuited on himself and expends just as much energy wrongfully in thought about his health as he did before in thought about his business. As a rule he will live longer by letting him go on with his business, thought it is perfectly clear that that is doing him harm. There is a question of two evils and his business is apparently the lesser evil.

If there is something that a man can turn to with supreme interest so as to occupy himself with it to the exclusion of business thoughts at least for a good portion of the day, then there is every hope of securing that lack of tension in arteries that will save them from further deterioration. It would indeed be worth the while for men, just as they try to keep themselves in good physical health by indulging in exercise when they are young, to provide for their mental health, and, above all, their need for relaxation when older, by training themselves to indulge in some hobby that may become a precious interest in life.

This is the therapeutic value of a hobby. Business may be a grind, while his hobby is usually much more than a passing interest, and he may even gradually learn to occupy himself with it almost completely. At least, he does not get short circuited on himself. The physician of the present day then is prone to say to every one, Acquire hobbies when you are young. If he is interested in the present status of education he is very likely to say, Be sure you get a liberal education for that gives you ever so much more chance of having a real hobby, a profound intellectual occupation with some great subject apart from practical life. The physician who sees many of these cases will surely re-echo what President Wilson said not long ago: "Let us stop specializing the student, and now let us generalize him." Such generalization makes for health of body and mind and even constitutes an important factor in the prolongation of life because of the variety of interests which it encourages. This factor grows all the more important as accidental causes of disease are brought more and more under control. It is indeed the secret of a longer, healthier above all happier life for those who escape the accidents that shorten life in early years.—"The Independent."

DEPARTMENT OF EDUCATION.

The City of New York,

Suggestions to Local Supervisors of Physical Training.

WHAT TO SEE IN THE CLASSROOMS:

General:	Has the teacher a syllabus? Is she giving the lesson for the week? Does she know exercises?
Ventilation:	Do monitors open windows?
Temperature:	65° to 68° F.
Standing up and taking Distance:	Alertness.
Posture:	Attention to posture at beginning of lesson. Head—Chest—Weight.
Stretching:	Cues and urging for posture. Is good posture obtained? Individual correction.
Breathing:	Face windows. Urging by cues. Are lungs filled? Chest lifted? Is posture improved?

Marching:	Do pupils know what to do? Accuracy, military alertness, brisk time.
Facing: Lower Grades:	Drill on direction. Do the children know right from left?
Other Grades:	Alertness, accuracy. Is facing done sharply and by all in time? Is good posture maintained?
Formal Exercises:	Does teacher know exercise? Do pupils know exercise? Are response commands maintained with proper pause? Do they become rhythmical? Does class go ahead of teacher? Is there speed and accuracy? Are terminal positions emphasized? Is good posture obtained? To fullest extent? Are descriptive urging commands (cues) used? Are positions which will correct poor posture emphasized? Does teacher know the purpose of emphasizing these positions? Are individuals corrected? Do pupils gain in alertness? In knowledge of exercise?
Whole Lesson:	Is there a tone of pleasure to the lesson, and a pride in good performance? Has there been sufficient "exercise"? Has a game been used? Does teacher understand corrective, hygienic and educational results of exercise, and how they should be obtained?
Classroom Games:	Are they used in every lesson? Do all children know them? Do teachers get results from games, i. e., exercise, pleasure and relaxation, (hygienic), sense training, alertness, motor training (educational)?
Two-minute Drill:	Is it given twice in A. M., once in P. M., or between every two periods (unless one of these is devoted to physical training)? Does teacher know what it is for? (Relief from sitting, corrective, hygienic.) Does each exercise produce its appropriate result?
Recesses:	Is the playground clean? Is it overheated? Are recesses organized? Do teachers know enough games well? Have children learned games? Do they play (i. e., enjoy games)? Are results obtained (i. e., recreation, education and hygienic results)?
Marking:	Are all pupils marked on physical training? Are all pupils working for improvement?

C. Ward Crampton, M. D.
Director of Physical Training.

—A Practical Step.—To mark the fiftieth anniversary of the unity of the Italian states and their formation into a kingdom, celebrations on a gigantic scale will be held in Italy during 1911. These will include the inaguration of a National Stadium, subscribed for by the Italian nation, and the approximate cost of which is £65,000. The planning of this vast structure, built on the model of the Stadium at Athens, and to have a seating capacity of 60,000, is due to the initiative of The National Institute for the Promotion of Physical Education in Italy, an organization dating from 1907. "London Physical Education."

NOTES FROM NORMAL SCHOOLS.

THE NORMAL COLLEGE, INDIANAPOLIS.

The Students' Alliance has had some very interesting meetings. It has been decided to issue a school paper to the alumni of the College in order to keep them informed of the progress made. The first number will probably appear in February. The editorial committee consists of George Miller, General Manager; Wm. Nicolai and Louis K. Appel, Associate Editors.

The last conference meeting was highly interesting. The program was as follows:

Opening song by the class.

Reading, "Playgrounds," by Mr. Nicolai.

Parliamentary Practice, by Mr. Miller.

Recitation, "Des Saenger's Fluch," by Mr. Modler.

Piano Solo by Miss Knorr.

Impromptu speeches by Messrs. Seiffert and Foertsch and Miss Scott.

"Frauds," by Mr. Moore, Professor of Anthropology.

Closing song by the class.

The last dance was not as well attended as had been expected, but the social committee has decided to arrange an affair for the end of the month. Just what it will be is not as yet known, but they promise to have something "novel."

With Miss Gladys Dixon's appointment as teacher of physical training in the Allegheny High School, which occurred in the latter part of October, all of last year's graduates now have positions.

The vacancy occasioned by the death of Mr. Robert Nix has been filled by Mr. Chas. E. Emmerich, former Principal of the Manual Training High School of Indianapolis. In him the College has acquired an efficient man of high caliber. He has already endeared himself to the students and it is their earnest wish that success may crown his efforts.

Louis K. Appel. '11

GYMNASTIC AND ATHLETIC NEWS.

By EMANUEL HAUG, 507 West 158th St., New York.

The Executive Committee of the Intercollegiate Association of Amateur Athletics of Ameriva will present the following changes at the annual meeting of the Association to be held Feb. 25:

Concerning eligibility for competition—No one shall represent any college or university as a competitor at any intercollegiate meeting who has not attended said institution one full calendar year and attained during that period a satisfactory standard of scholarship.

Concerning times of competition—A student shall be allowed to compete at the intercollegiate meeting three times and no more, no matter whether he changes from one college to another or not. This applies to all departments, medical, law, academic, &c. It shall be understood that a student may compete one or two years in one department or college and then go to another department or college for the remaining years or year, but in no event shall a student compete more than three times.

Concerning hurdle races—A competitor knocking down three or more hurdles or any part of three or more hurdles shall be disqualified. A competitor who trails his legs or foot alongside any burdle shall be disqualified.

Concerning running broad jump—The competitors shall have unlimited run, but must take off from or behind the scratch line. The scratch line shall be a joist eight inches wide, the ground in front of which shall be removed to the depth of one-half inch and to the width of six inches. When any part of the competitor's foot is over the scratch line while taking off for a jump it shall count as a try.

Hans Holmer of New York had the athletic world sit up and take notice by winning the classic Marathon race at Edinburgh, England, on January 3. He created new figures from the 19th mile to the finish. A comparison of Holmer's running with the best previous English record follows from nineteen miles to the Marathon:

	Previous Record.	Holmer's Record.
19 miles	1:45:14 1-5	1:43:43
20 miles	1:50:58 3-5	1:49:29
21 miles	1:59:20	1:55:30
22 miles	2:06:05	2:02:04
23 miles	2:14:05 2-5	2:08:46
24 miles	2:24:05 2-5	2:15:58
25 miles	2:28:17 2-5	2:23:17 2-5
26 miles	2:35:01	2:30:48
26 miles 385 yards	2:36:18	2:32:21 4-5

The former marks at nineteen and twenty miles were made by Gusta Ljungstrom in Madison Square Garden in a twenty-mile race. The twenty-one and twenty-two mile marks by L. Bouchar dat Stoke-on-Trent, and from twenty-three to twenty-six miles and 385 yards, inclusive, by the same man in Agricultural Hall, London.

In the Polo Ground Marathon, on a correctly measured track, last Spring Gusta Ljungstrom, a Swede, ran the Marathon distance in 2:34:08 2-5, which was, until Holmer's fine performance, the best record in the world.

Last month at the Hotel Cecil in London, a number of leading physicians and surgeons were spectators of one of the most extraordinary exhibitions of muscular control ever given. The man who gave it, Nordini by name, is able to stop the beating of his own heart and do other things which seem impossible.

Many men have by exercises developed enormous muscles, but they have always been visible and remained firm to the touch, even when relaxed. Nordini can relax his to such an extent that by shaking his arm he can make the triceps quiver like reeds shaken by the wind and, by a simple effort of will, without even clenching his hand, can make his upper arm as hard as iron, while the forearm remains perfectly soft and flabby. He can do this with every muscle of his body; but what is even more extraordinary, he can actually stop the beating of his heart for more than twenty seconds and retard or accelerate his pulse at will, thereby defying the laws of nature.

Nordini claims that he can remain under water from six to eight minutes and that he can live for a protracted time when buried in the ground. To prove this, he proposes at his exhibition to be placed in a box seven feet long and three feet wide, with a foot of sand covering the bottom. His mouth, nostrils, and ears will be filled with cotton wool and his eyes bandaged, to prevent the sand from entering his system. Then sand will be piled upon him until he is covered by at least eighteen inches of sand weighing a ton. After remaining in this position for a quarter of an hour he will be extracted alive and well.

Nordini is an Austrian Pole, thirty-seven years of age. His extraordinary muscular development was apparent as a child, and when only eight years of age his schoolmaster, having seen him bathing, called a doctor's attention to his unusual development. The notice thus attracted turned the boy's attention to physical training, and from that day the study of his muscles has been Nordini's chief interest in life.

He never touches alcohol or smokes, and eats most frugally and carefully. The celebrated pathologist, Prof. Virchow, took great interest in Nordini's anatomy and often lectured on him.

It is only during the last year that Nordini decided to give his discoveries to the world, and until now his studies and scientific investigations have been made in secret. He has invented a physical developer, and his theories on physical training are likely to revolutionize present day methods; his idea being, not only to develop muscle, but to give the student complete control over the entire muscular system.

A novel challenge has reached America from Charles Wilson of Manchester, England, bidding for a match with any all-around athlete in the United States for the championship of the world. Wilson is spurred to this action through the non-acceptance of a similar defi of his issued to a Mr. Webster of Victoria College, Melbourne, Australia.

The text of the challenge, which embraces almost everything in track athletics, also takes in swimming, cycling, rowing, and tumbling, the suggestions for the various events to be contested being as follows:

Swimming one-half mile, rowing one-fourth mile, plunging of one minute duration, running 100 yards and one mile, walking one mile, 120-yard hurdles, shot put, hammer throw, running high jump, running broad jump, pole vault, one forward spring jump and ten forward spring jumps, with weights; three forward spring jumps, without weights; five backward spring jumps, with weights, and cycling from five to ten miles.

These are broadly the items put forth, but the challenger says they can be altered or modified in order to secure what may appear to others to be a more representative contest. He also adds that the amount of the side wager and all further particulars could be then arranged.

Work on a new Athletic Union.—Athletic leaders of Kane county, Illinois, have organized a new federation. These men conferred last week and laid the foundation for another such association as the Amateur Athletic federation, now flourishing in this county. The new association will be known as the Kane County Amateur Athletic federation and is to be conducted under practically the same conditions as the Cook county association. Ten units were made charter members of the Kane county league at the inaugural meeeting, the following being taken in as a starter: Dundee high school, St. Charles School for Boys, Elgin Sunday School Athletic league, Aurora Y. M. C. A., St. Charles high school, Elgin Y. M. C. A., West Aurora high school, Geneva high school, Elgin academy and Elgin high school.

The Kane County A. A. F. is independent of either the Amateur Athletic Union or the Athletic League of North America, but it will work in conjunction with the Cook county organization and with the same ideals in view. Athletic relations are to be established, according to prominent men behind the movement, with the local federation.

Longworth, the New South Wales swimmer, clipped 3 4-5 seconds off C. M. Daniels's record for 1,320 yards recently, making the distance in 17 minutes and 42 seconds. Daniels's record of 17 minutes 45 4-5 seconds was made in New York City on Feb. 25, 1907—making sixty-five turns in a tank.

Longworth finished twenty-five yards in front of Cecil Healy, the Australian holder of the amateur record for 100 yards in open water, and who in turn was one yard ahead of F. E. Beaurepaire of Victoria, holder of the amateur record for 1,000 yards in open water.

The proposed amendment of the fancy diving rules now in force in this country to conform with the international code has met with the approval of contestants, but they believe that the change should not take place until sufficient notice has been given them to enable them to learn and practise the difficult dives which the new rules allow. This seems fair in view of existing conditions. The proposed amendment consists of the introduction of foot dives in the championship list. At present they are barred altogether and the A. A. U. has realized the importance of developing our men in this branch of the sport because of the high marks which some foot dives are given abroad, which would place upon our representatives a heavy handicap in the next Olympic Games, should they continue in ignorance of them. It is understood, however, that to permit these dives without giving competitors time to study them would allow the crack foreigners now in the United States a decided and unfair advantage over our men. The new feats are not acquired easily. It may be remembered that so versatile a performer as George Gaidzick, the all-around title holder, attempted some of them just before the Canadian championships last summer and could do nothing with them.

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